PHANTOM WALLS

By

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TO

MY FRIENDS AND HELPERS

KNOWN AND UNKNOWN

PREFACE

Modern physics is insisting that most of our mundane experience is illusory, that even space and time if taken separately are abstract frames dependent on our limitations, and that we are surrounded by phantasmal appearances through which our senses cannot penetrate. Matter is what we primarily apprehend through the senses; but the nature of matter is mysterious. The unit of matter has been conceived or at least expressed in various ways. Einstein and Eddington formulate it as a curvature of hypergeometrical space, and say that the curvature broadcasts its effect as gravitation. They contend, not that matter is something producing that curvature, but that it *is* that curvature, and that the laws of motion which it follows are appropriate to space-time of

many dimensions. (W. K. Clifford anticipated some such possibility by a stroke of genius some half century ago. See for instance an Article of his in *The Fortnightly Review* for 1875.) Expressed in tensor language, matter is defined as $G_{\mu\nu} - \frac{1}{2} g_{\mu\nu} G$; and this abstraction appears to be endowed with conservation and with obedience to the laws of dynamics so far as necessary. (See Professor Eddington's Article in *Mind* for April 1920.) Thus matter is thought of as a configuration or warp in a reformed and unspecified ether of space.

On the other hand, De Broglie and Schrödinger try to think of the unit of matter, less geometrically and more physically, as akin to a small localised area of group waves, such as can be formed by an assemblage of constituent high-frequency periodicities in a super-dispersive medium wherein wave velocity is a function of wavelength. The supposed constituent waves have at present no more than a hypothetical existence,—they make no appeal to our

senses or instruments—but the group waves composed of them appear capable of satisfying dynamical requirements. They can travel at any desired speed according to their wave-length; their frequency of vibration determines their energy; and they have also a potential frequency or potential energy dependent on the reaction of other bodies in their neighbourhood. In fact the equations of motion of such group waves can be the same as the equations of motion of a material particle. Thus matter may be regarded as something like "a ripple on the boundless deep."

I do not say that these diverse modes of expression are contradictory or inconsistent; they probably both contain an element of truth. The work is very brilliant and quantitative and well deserving of study, but clearly neither of these theories is the last word on the subject; though I must say, parenthetically, that the wave theory seems to me specially hopeful and likely to be physically justified, however remote it be

from ordinary perception. Other abstract modes of presentation have been suggested, still more formidable and still less conceivable than these. The attempt to visualise reality, to express fundamental things in terms of anything apprehensible by the senses, has been largely given up. It seems to be generally agreed that our physical perception of existence is but a shadowy phantom of reality.

Yet the mind of man tries to penetrate through the illusion and get to the reality behind. It refuses to be limited by sensory experience: it seeks to break through the phantom walls. Instinctively the mind feels that it must have some affinity with those basic realities lying behind appearance, whatever their ultimate nature may be. Mind animates matter; its incarnate function is to interact and interfere with physical processes. We know at first hand that our individual self can guide and dominate events in the material world. We are not depressed therefore, but rather are

exhilarated to find how effective are our mental operations, how vital our inferences and intuitions, how secure and vivid our spiritual apprehensions, compared with the meagre information received and submitted to mental interpretation through our animal senses.

Even through them however we perceive that the world is full of beauty and orderly arrangement; so we take heart and are content to wait till we can apprehend reality more clearly. We need not be perturbed by the difficulty of understanding the nature of our sensory surroundings, nor by the brevity of our inherited association with a material body. We feel that we are greater and more enduring than any self-constructed instrument of manifestation here and now. We recognise the beauty and adaptation of nature as so far revealed to us; and we have faith that the glory and grandeur of the universe, when at length we are more fully able to appreciate it, will eclipse the imagination of poets and exceed all that we can desire.

Those who are old enough to have ascended the Pisgah-heights of experience, and studious enough to be able to survey the ocean of eternity from Darien-like peaks, may at moments attain a larger sense of vision; and thus, like Tennyson's Ancient Sage, may recall to a more reasonable sanity those harassed and distressed ones who complain that the outlook is dark, and are tempted to cry out against the heavens in futile despair:—

> "For wert thou born or blind or deaf, and then
> Suddenly heal'd, how would'st thou glory in all
> The splendours and the voices of the world!
> And we, the poor earth's dying race, and yet
> No phantoms, watching from a phantom shore,
> Await the last and largest sense to make
> The phantom walls of this illusion fade,
> And show us that the world is wholly fair."

It is because a beneficent spiritual world has to me become the ultimate reality that I have composed this book.

OLIVER LODGE.

1929.

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1

The Interest of the Plain Man in Religion

It is sometimes said that the Churches are losing their influence, but nevertheless people in general are keenly interested in all problems connected with the reality of a spiritual world They feel that information on this topic is now attainable, and instinctively they desire to hear more and to realise the bearing which an extended knowledge of facts might have on the problems of life and conduct and the mystery of existence generally. If a spiritual world exists, and if humanity can by any means get into touch with it and thereby gradually learn to answer questions about the true nature of existence and the destiny of man, information on these topics must be of value, and must be of special value to the bereaved. The only question is whether such information is attainable, and whether the major beliefs

of religious people are well founded or not.

Religious belief even on this planet has taken a great variety of forms, and differences between the sects are often emphasised. They cannot all be right; but then on the other hand it is possible that none of them need be wholly wrong. Truth is very large and many sided; and when we remember the multitude of worlds, and the many dispensations there must be throughout the universe, we remember also the universal instinct of humanity to grope after higher things, to feel that this short material life cannot be all, and to hope that it is a prelude to some great end. For although everybody is very busy, in the pursuit of business or of pleasure, no one can feel quite satisfied unless they have some faith in the ultimate meaning of existence, and some hope which will enable them to bear the troubles and losses of this present life with equanimity and something more than resignation. It cannot be that the instinct which has led to the erection of

cathedrals, and of churches in every village, is wholly mistaken and misleading. There must be some great truth underlying the instinct for worship: and that truth, if it could be grasped, must be more important to humanity in general than all the conveniences and applications which the progress of scientific knowledge has put into our hands. Systems of religious belief may be faulty as well as incomplete; but there is a keen desire to make use of them, to learn more about the facts that underlie them, and so gradually to rise above the diversities of sectarian controversy, and to see life steadily and see it whole.

Perhaps the first and fundamental question which arises in people's minds is whether this life is all, or whether, when personality and character have once been developed in association with a material body, they shall continue under other conditions and in fresh surroundings, apart from the material body in which they were developed; whether in fact man possesses a soul which can

survive the loss of the material body, which can carry with it its memory, experience, and affection, and can go on and on, perhaps without limit.

This is a comparatively simple question, the answer to which might in due time become, not an article of faith, but a matter of knowledge; the problem is one which might be attacked by science and some definite answer attained. It is known by most people now that the evidences for survival are numerous, and by some it is thought that they already constitute proof. Others, who feel that scientific proof is a peculiarly stringent and formidable thing, are of opinion that the evidence, though striking and sometimes compelling, is not finally convincing. Like all other raw material it admittedly requires careful study and long-continued investigation.

But assuming that a scientific answer is possible, the effort to examine the evidence is worth while; and if ever it is found that verified occurrences point unmistakably in

that direction,—if in fact they already carry conviction to trained minds,—then the whole outlook on life is changed, and the effective existence of a spiritual world begins to be demonstrated. For if man survives death, then all those who have lived on this planet, the saints and the great men, the helpers of humanity, those who have died and suffered for it, those who have lived and worked for it, are still in existence, and are likely to continue their efforts for the continued progress and elevation of the race. If moreover they tell us (as they do) that they are all the subjects of a Higher Power, which they and we alike worship, a Power that has brought humanity into existence and is continually guiding it in some far seen and hopeful direction, then that one fact, when thoroughly apprehended, would put heart into our endeavours and make us realise that we too are among the agents for the accomplishment and fruition of the will of that Higher Power.

For it appears to be an undoubted fact

that the Higher Power only acts through agents, and does not exercise coercion. If it did, the world could be more perfect in appearance, as the inorganic or mechanical world is already perfect, but it would be a machine, not a spiritual entity at all. We are evidently not machines: we have free will and the power of choice. To this great possession our difficulties and failures are attributable. The aim is higher than we can readily imagine. The divine effort is not to make things perfect by compulsion, but to secure willing co-operation, to create a race of intelligent beings who shall realise something of their possible destiny, and shall do what little each of them can towards the furtherance and fulfilment of the scheme.

The beauty of the material world is one of the revelations to which all are more or less accessible. The law and order ruling throughout the universe,—the same laws holding on its remotest star, showing that it is all dominated by one supreme Mind,—is another of those revelations. And the

Christian religion insists that this dominating Power, though so vastly superior to anything that humanity can imagine, is not aloof from it, but enters into the storm and stress, is continually influencing though not compelling the free agents of many grades,—some of them incarnate in material bodies, others emancipated from the flesh but still continuing,—helping them in their difficulties, sympathising with their temptations, suffering in their pains, and imbuing them with a hope that, in spite of the puzzles and complications, there is an ultimate outlook beyond their present imaginings, that in fact the universe is dominated and controlled, not merely by a mighty Power, but by what is authoritatively represented as the loving heart of a Father.

A truth like this has been apprehended by the Saints of all time, though occasionally confused by perplexity and doubt. It has been perceived most clearly by the childlike spirit. It has been revealed to babes and has been sometimes hidden from the wise and

prudent. It is hidden from those who limit their attention to the changes and chances of this mortal life without trying to look beyond it into Eternity.

Even the Universe is eternal: it has existed for untold ages, and is evidently going to exist. It seems to have no beginning and no end. Everlasting existence is beyond us: nevertheless we are immersed in it, and are privileged to take part and to understand something, though as yet very little, of its scope and meaning. The Churches are presumably doing their best to cultivate an atmosphere of faith. They may resent the incursion of attempted knowledge on these subjects, but knowledge is nevertheless growing; the plain man is beginning to feel that some knowledge on these topics is attainable, and is eager to learn more. However much knowledge is attained, there is always plenty of room for faith. As the area of knowledge increases, the frontier of ignorance enlarges too; and those who know most are most impressed with the

immensity of the unknown prospect. In every direction as we advance we are conscious of limitation; but, as in every exploration, the only plan is to make sure of our ground as far as we have gone and to proceed further. This is the beginning of wisdom. Wisdom is more to be desired than anything else, and what the end of wisdom may be we cannot tell. Probably there is no end.

> "Shall any gazer see with mortal eyes,
> Or any searcher know by mortal mind;
> Veil after veil will lift—but there must be
> Veil upon veil behind."

Knowledge can continue to grow to all eternity and yet not exhaust reality. Our direct awareness is only of such aspects of it as are accessible to our animal senses. We see only material things, and they are not ultimately satisfying, we are conscious of a yearning to go beyond them; we feel that we are dwellers in an unseen reality of which we catch only occasional glimpses. A great poet has told us of the momentary glimpse

vouchsafed to him amid beautiful surroundings, when the phantom walls began to fade and let reality shine through :—

> "I have felt
> A presence that disturbs me with the joy
> Of elevated thoughts; a sense sublime
> Of something far more deeply interfused,
> Whose dwelling is the light of setting suns,
> And the round ocean and the living air,
> And the blue sky, and in the mind of man :
> A motion and a spirit, that impels
> All thinking things, all objects of all thought,
> And rolls through all things."

So let us take heart, we are beginning to penetrate into the unseen, the unexplored; already we are infused with a great hope, and in that hope and growing certainty we press forward towards the mark of our high calling.

2

The Possibility of Survival from a Scientific Point of View

I SHOULD not have known the truth about the friendly co-operation of a spiritual world —existing under conditions beyond our normal perception—had I not received indubitable proof of the persistent continuity of individual personal existence. The survival of personality is therefore a theme which is bound to run as a guiding thread through most of these chapters, though I do not think it necessary in this volume to discuss the available evidence; nor need I assume that my readers are similarly acquainted with the facts and equally convinced.

The hesitating attraction which some people feel for the subject of what is often called spirit communication, and the instinctive dislike or repulsion which others feel for the same subject, is due partly to the influence of surroundings, and partly to the

general attitude of the community in which they live. If ever the facts became generally accepted by scientific men, the attitude of the public would be gradually changed; religious people also would without insuperable difficulty adjust their views to acceptance of phenomena generally agreed upon, as they have already done in connexion with the at first heterodox discoveries of astronomers, geologists, and biologists. But as long as scientific acceptance is limited to a comparatively few individuals here and there, the general public if uninstructed do well to be cautious, and to wait for a clearer consensus of opinion among those presumably best qualified to judge of reality. For science is or ought to be a study of reality wherever it is to be found, independent of any conclusions or consequences that may be drawn from it, and irrespective of any influence that the spread of knowledge may exert upon human life and conduct.

Assertions about supernormal or unusual phenomena are plentiful enough; but at

present there is an element of uncertainty about them which militates against their general acceptance as fact. Trustworthy and crucial evidence is difficult to obtain, and there is a natural disinclination to enter upon a course of research without some *a priori* probability that the quest would lead to something real, and not into a quagmire of popular superstition and folk-lore. Testimony about obscure mental phenomena and psycho-physical happenings has been prevalent throughout human history, and among all races of men; but the phenomena testified to are at first sight so contrary to the general trend of human experience that they are naturally looked at askance, and are not examined with the same keenness and perspicacity as have been devoted during the last century or two to what seemed to be more natural phenomena,—that is to say phenomena which can be repeated in the laboratory at will, about which some guiding theory can be formulated, and which are more harmonious with the general trend of

scientific progress. It can hardly be merely because the asserted facts are extraordinary, or because they do not appeal to the senses in the ordinary way, that they are disregarded and suspected: for many of the facts in orthodox science are of this character. The constitution of an atom, and the orbits of an electron, make no direct appeal to the senses; they have to be explored by recondite methods; yet the difficulty of a complete comprehension of them does not deter competent explorers from giving them minute and sustained attention, or from elaborating theories, which, however imperfect, are susceptible of gradual improvement, and seem to open the way to a wider truth. The supersensual phenomena dealt with by mathematicians are just as difficult of direct apprehension, and involve just as much speculation and hypothesis, as any of the barely credible mental phenomena which come under discussion.

The aloofness of science is not really because the phenomena are elusive and diffi-

cult of observation; rather it is because they appear to run counter to preconceptions or prejudgments, or what may be called rational prejudices, based upon a long course of study of natural phenomena, with which these asserted occurrences appear to be inconsistent; so that any favouring testimony has to be criticised, continually suspected, and frequently discarded, because it appears to be testimony in favour of what is *a priori* impossible or absurd. The aim of science has been for the most part a study of materialistic phenomena, a study of mechanism, the mechanism whereby results are achieved, an investigation into the physical processes which go on, and which appear to be coextensive with nature. Any theory which seems to involve the action of Higher Beings, ot of any unknown entity controlling and working the mechanism, is apt to be extruded or discountenanced as a relic of primitive superstition, coming down from times when such infantile explanations were prevalent. Such ideas seem to belong

to a time when there was no adequate notion of the coherent scheme of physical process which must underlie all the baffling and inscrutable operations of nature.

There was a time, for instance, when the movements of the planets were attributed to psychic guidance, the action of angels or some other beings; when thunder and lightning were the direct manifestations of the wrath of Zeus; when plague pestilence and famine were a commentary on human sinfulness, and were stemmed, not by medical and sanitary effort, but by the erection of altars and the humble submission of sacrificial atonements. The triumph of Newton and Laplace consisted in showing that the regular though puzzling phenomena occurring in the heavens were to be accounted for mechanically by the force of gravitation. Thus it was that modern science was born; and on those lines it has continued its successful career. Portents were thus reduced to order. Lightning became one of the inanimate manifestations of electricity:

volcanoes were due to the spontaneous radioactivity of complex atoms: disease was due to the secretions of microbes and bacteria, which were visible under the microscope. And the ambition of science was to find a physical cause, on the same sort of lines, for every occurrence of whatever nature it might be. This ambition, which was formulated by Newton himself as a hope and aspiration, has been justified by long-continued experience. A physical process underlies every class of phenomenon. The evolution of living things, the evolution of the stars and planets, the birth and death of worlds, are going on before our eyes. Even the evolution of matter itself is under consideration. The stars have yielded up their secrets, the atoms also. The laws of physics and chemistry reign supreme throughout the cosmos.

What wonder then, in face of this magnificent achievement, if spiritualistic views and hypotheses are looked at askance as a backward step, a reversion to barbarism, a

giving up of the clue which human genius has found so successful; or even as treachery to the pioneers and architects who have erected the splendid structure of modern science. What wonder if the attempt is made to explain every mental process as a chemical action in the cells of the brain, to explain every action of live things as the activity of physiological mechanism, and to hold that when the physiological process is interrupted, or the machinery destroyed, all vitality necessarily ceases; in other words that life and mind are the working of an organism, and that when the organism ceases to function, they completely perish.

And yet many biologists have themselves, when they began to philosophise, encountered a real difficulty. The mechanism was complete as far as it went: the physical processes of every action could be traced, either in fact or in imagination: but there was an outstanding difficulty about consciousness, which could not be explained by mechanism. Their own awareness of the processes going

on was itself something more than the mere processes. There were things in human nature which escaped their physiological ken, which seemed to be of a different order, something which made use of mechanism, but which transcended it, something towards which mechanical science gave no clue. The sense of beauty, for instance. What piece of mechanism could contemplate its own beauty? What mechanical device could understand its own working? How could human beings plan and contrive and design, and form theories, and seek to apprehend the universe, if they were nothing more than mechanical structures? The only way consistent with philosophic materialism was to suppose that consciousness was a kind of illusion, and that these mysterious functions could probably be themselves reduced to mechanism if only we had sufficient knowledge. But the formation of such a hypothesis as that is conspicuously irrational. It is leaving the safe ground of science, the exploration of reality, and denying some

parts of reality itself. Such denials are illegitimate, and are themselves superstitious.

It has become pretty obvious that human nature is more than mechanism, that it utilises the physical energy and the physical and chemical processes of its organism, but that in every important aspect it transcends those processes. Even the mere sensation of colour and tone are more than belong to the physical world: physically there is nothing except vibrations of different frequency. Emotion again, the emotion raised by poetry, drama, music, far transcends the admittedly physical basis of these things. Man plans and contrives and directs the forces of nature to higher ends: he uses and dominates the material universe: he has some understanding of it: he feels sympathy and affection: he has faith and hope and love. These elements in his nature are far more than molecular processes going on in the brain. These higher attributes are displayed and manifested by chemical processes, but in themselves they

transcend and outlast them; they belong to another order of existence, interpenetrating and utilising the material, but not limited by or coextensive with it.

Well, that is the view to which some of us have been led: that is the view which I think most philosophers now take. Hence the *a priori* prejudgments and prejudices are now altered. If there is testimony bearing upon the perennial existence and survival of these higher things, we need no longer look at it askance, or consider it as foreign to our perception of reality. Reality is a much bigger thing than the mechanicians had thought. Their perceptions are true as far as they go, but we can go much further. Testimony to survival need no longer be unacceptable. Indeed we should expect something of the kind. What survival means, and what its implications are, may still remain to be ascertained, but there is a *prima facie* case for investigation. We are not traitors to science when we explore mental processes, however unusual and

surprising they may be. There is a large amount of evidence that personality persists, that individuals continue after the destruction of their bodily organism. They may find it difficult to manifest their continued existence; but, according to the evidence, they have managed to do so. The evidence must be scrutinised with great care; but there is no reason to disbelieve it on *a priori* grounds. The body of evidence has grown of late years, and is growing. So that many now have no doubt that their loved ones continue, that they are still watching and helping and guiding, as of old; that realities do not go out of existence, that these higher attributes of man are just as real as any others, more real because more persistent. We feel assured that there will come a time of reunion, that intelligence and character and tastes and aptitudes persist, and that love is the dominating power in the universe,—a universe far greater and higher than its merely material manifestations.

In its own field the revelations of science

are magnificent; and, if we exclude the element of Personality, which science hardly deals with, it may be true, as Lord Moynihan has recently declared, that the God of science is a greater and more glorious Being than the God of the Theologians.

3 *Materialistic Objections and Difficulties*

In their official pronouncements scientific men are chary of touching on Theological ground, and are not much concerned with philosophy or with spiritual apprehensions: they usually limit themselves to more sensory and tangible entities, in the cultivation of their proper field of work; but sometimes they think it necessary to issue a *caveat*. Sir Arthur Keith, for instance, has been expressing himself of late in opposition to ideas of survival such as those that I advocate, and it is a pleasure to refer to his pronouncement; for he has a most delightful personality, and is regarded by myself, in common with most other scientific men, with real affection. As everyone knows, he is a great anatomist, and is familiar with the structure and the workings of the human body, and indeed of animal

bodies generally, to an extent which is quite beyond any of us. All that he says on that subject therefore we should accept with due respect. But the universe is a very big thing, and an animated structure is a very complicated thing, so that no one pretends to know *everything* about it, and no one living is able to answer all the questions that can be asked. Philosophers know a very great deal, much more than children and ordinary people can apprehend; but the greatest philosopher, from Socrates downwards, is keenly aware of his own ignorance, that is to say of the region beyond the confines of his clear and accurate knowledge. The universe has so many aspects that it is seldom possible for any one individual to study more than a few of them. This is what Sir Arthur Keith and other scientific men mean by their limitations. They are immersed in the contemplation of the aspects that they have studied, and for the most part ignore other aspects or leave them to other students.

Naturally I also can only speak for myself;

I have to look at the subject from the point of view to which I myself have been led by my own studies. It is true that I see things somewhat differently from an anatomist, but that is a natural result of a different point of view. The same landscape appears different when looked at from an aeroplane or from a mountain-top, and from a valley or a plain. Both may be describing truly what they see, but neither is describing the whole truth. One may be more aware of the clouds and of atmospheric conditions, while the other has a better opportunity of studying the details of the plant and animal life among which he lives. The difference is not one about which there need be any quarrel or controversy; it is a natural result of our concentrations and limitations.

Sir Arthur speaks of himself as concerned chiefly with concrete things which can be seen, handled, and measured. His mind, he says, works on objective things, things that appeal to the senses; but even he admits the existence of many things which he

cannot see or handle; for instance he speaks of atoms and their structure, and what he calls "the planetary organisation of even the smallest atoms." But he has never dealt with single atoms, and neither he nor anyone else has ever seen inside them: their constitution is only known, so far as it is known, by mental inference, not by weighing and measuring in any ordinary sense, and certainly not by the microscope. In the science of physics we are continually dealing with things which we never hope to see or handle. We deal with space as well as with matter; and we find in space mysterious properties which we think may ultimately explain some of the properties of matter. As physicists, we have learnt not to deny the existence of realities far beyond our senses. In fact it is mainly in a supersensual world that our most interesting work lies.

Still every scientific man obeys the same general rules of enquiry; and we all infer a multitude of occurrences of which we have little or no direct experience. The difference

is one of degree rather than of kind. Nevertheless there is a tendency for one side to ignore anything out of contact or connexion with matter, while the other side then chiefly begins to attend to it. When an atom radiates, or emits some of its energy into space, one group of scientific men, which we may call the anatomists or more generally the biologists, cease to attend to that which has gone away from matter; whereas radiation is one of the main subjects to which a physicist does attend. We are in fact beginning to attend far more to what goes on in space, and to the linkages and interstices between the atoms and between the worlds than we are to any visible and tangible objects. It is the material objects which show us what is happening, those are what we all have to observe, but we use them more as indicators or instruments for exploring the less familiar and more unknown region which lies between them.

Atoms and matter are quite incompetent to change their state of motion of themselves.

When any change of motion occurs it is because something has reached them out of space. Atoms are said to attract each other, and to cling together by what we call cohesion; this is due to what we may call a residual electric field, and that is a property of space. The behaviour of the atoms teaches us something of what is going on outside them. Every ultimate particle is in a vacuum; it never really touches another particle; it feels and is moved by the condition of space around it. This is true also in astronomy. The deflected movements and revolutions of the heavenly bodies are due to the state of space around them; and by studying their deflected paths we have learnt something about the condition which causes them. In that case the agent is not an electric or a magnetic field, but something of fairly similar characteristics which we call a gravitational field. And Einstein and others are trying to teach us, and gradually to learn themselves, what sort of thing a gravitational field is. We

cannot hope to observe it directly; for space makes no appeal to our senses, but we can infer what is going on there, or we hope to do so, by using visible portions of matter as an index or demonstration or manifestation of something supersensuous, *i.e.* beyond the range of our senses.

Our senses truly are very limited, and it is a wonder that we are able to make all the inferences that we do make. When we see a piece of iron jumping to a magnet, we do not think that either the iron or the magnet is responsible, except indirectly. We take it as a sign or indication or manifestation that the space near them is modified in such a way as to exert force upon the pieces of matter, and drive the two things together. When we see a weight propped up or suspended precariously, like a heavy block of stone supported by a crane, we do not think of anything peculiar about the stone; it is like any other block of stone, except as regards its position in space above the earth. We know that its lofty position makes it dangerous,

and that it is the sign or index of a great store of energy which might at any moment be liberated with a crash. But the energy is not in the stone or in the earth, it is in the space around, which tends to drive the stone and the earth together. The fierce energy of an explosive, like cordite or T.N.T., is in the space between the particles, until the moment arrives for liberation. Till then the material both looks and is quiescent.

So when we see what we may call animated particles, the material of a living body, behaving in a peculiar way, as an animal behaves for instance, we do not think of it as something peculiar to those particles,—something which we might investigate by examining them more closely; we feel sure they are obeying physical laws like any other particles; but the spontaneity and purposiveness of their behaviour—the animal's begging or its response to a call, for instance—makes us suspect that animated matter is influenced by something outside or beyond itself, something that we do not

really understand as yet, but which we call life or mind. We regard this unknown entity as real, just as real as a gravitational or electric or magnetic field, though we know far less about it than we know about them. So little do we know about life and mind, that these things have not yet come within the scope of physics. They remain in the mysterious region outside that scope, and as needing much further study before we can even begin to elucidate them. There is still plenty of mystery about even a gravitational field; in fact the whole universe is full of mystery. We are not living in an era when we can safely deny the existence of things because we do not understand them. We must continue to make observations and experiments upon matter of all kinds, using the matter as an index or manifestation of something that lies behind and employs matter for purposes of demonstration.

Hence when we are told that the particles of a brain initiate movements which generate thought, for instance; when we are told that

a brain plans and designs, let us say, a bridge or a cathedral or a work of art,—indeed we are sometimes told not only that a brain plans and contrives and executes, but that it remembers the past, anticipates the future, and hopes and fears and admires and loves,—when we are told all that we should be stultifying ourselves, and running counter to all analogies, if we agreed. We must not agree! We need not regard the brain cells as anything more than instruments utilised for the demonstration or manifestation of the activity of some unknown mysterious purposeful entity, which is thus enabled to appeal indirectly to our observation; through them we are able both to experience and to produce results in the material world. Life and mind do not alter the laws of physics and chemistry, as at one time those who were called Vitalists thought they did; they do not add to energy; the laws of mechanics, so far as matter is concerned, accurately hold. But those laws are supplemented, and animated bodies are guided or controlled

towards some purpose or object, by something apparently outside or beyond themselves.

We ourselves possess animated bodies and can do things. When we lift a fallen book on to the table, or when we light a fire, or when we play a piece of music,—we are not running counter to the laws of physics; we are merely utilising them. We utilise the laws of physics in speech, in writing, in telegraphy, in all manner of customary ways; and we do it with reason. So far as matter is concerned, we do nothing but move it, by means of the muscles with which our body is provided. Without those muscles we could not demonstrate our own existence; in fact we could do nothing but think,—and perhaps not much of that. But we need not move matter at random. A poet or an artist uses matter to display something which already existed in his mind, to convey an idea which no physics or chemistry can explain, something far superior to the movements or the rearrangements of material particles, or

anything that we can directly observe. And those who come after him can appreciate and interpret the meaning of his rearrangements of matter, the coloured pigments cunningly spread on canvas, or the black marks on a piece of paper, that he has left behind. They can understand his meaning because they have minds of their own not altogether dissimilar from the mind of the artist or poet, and because they have sense-organs which, using the material particles as an index, can interpret the beauty and significance of the arrangement.

The point of view here indicated is probably different from that of Sir Arthur Keith, and I presume from that of many other biologists—though I do not see why it should be. But it is not out of accord with general observation and general experience; it is in fact derived from such experience. It may seem rather abstract, vague, and intangible, but that is inevitable, since we cannot expect to solve great problems in a simple and easy manner. I will try however to be

a little more definite, and attack those few utterances of Sir Arthur Keith's with which I can perhaps usefully partly disagree.

First of all, however, with what he says about the brain I entirely agree. Our brain-nerve-muscle system is primarily adapted to the needs of animal life on the earth, what he calls "bread-and-butter purposes." When we use the organ for philosophising, it is, as he says, naturally rather inadequate.

But in another place he says "we know of mind only as a manifestation of a complex material organ called the brain." There I join issue. We can "think"—we are each of us "conscious,"—quite apart from any knowledge about our brain. It is mind which has enabled us to discover the brain. We could not examine or study brains unless we had minds. Mind is not a manifestation of brain; but brain is an instrument for manifesting mind. Sir Arthur puts the cart before the horse. The Ancients didn't even know that the brain was a mental organ. They seem to have thought that

our emotions were connected with the viscera; they seem to have thought that compassion was located in the bowels, depression or anger in the bile secretion of the liver, jealousy in the spleen, love in the heart, and such like. That the brain was the organ of mind, was a thing that had to be discovered. But surely the Ancients were familiar with "mind," and every child is familiar with mind, though it may know nothing whatever about brain. Mind is a primary apprehension, brain a very secondary one, the result of anatomical investigation and discovery. Anatomists' enthusiasm for the organ has led them to exaggerate, and think that they discovered, not the *instrument* of mind, but the mind itself. That I venture to say is an illusion. Thought is no more in the brain than music is in the violin. An instrument has to be played upon: it originates nothing. No musical instrument ever composed a piece of music! The particles in Newton's brain never composed the *Principia*. No assemblage of material

particles is responsible for the play of *Hamlet* or *The Fifth Symphony*. Speaking with all due respect, the idea is absurd; it is literally præ-posterous.

And now, in concluding this chapter, let me deal with one parable or analogy or illustration given by Sir Arthur Keith a year or two ago, when he was President of the British Association. He likened the mind or soul to the flame of a candle, which, being lit, displayed itself by certain visible behaviour, and then went out and ceased to be. So—he would suggest—does the soul expire into nothingness at death. The image or illustration is quite a good one; but Sir Arthur did not follow it up, as a physicist would. He limited himself to the material particles of the candle, and to the perceptible flame, just as an anatomist would. He did not bethink himself of what was happening in space. That candle was not lighted without an object. Its object was to illuminate something, that is to say to emit light. And what is light? Not something

in the candle, but something which emanates from the candle, and goes away into space: something different from matter, though associated with it. The real function of a candle depends on the properties of space; it is emitting something into space which, if space is free and empty of matter, will go on for ever. There is a line in *The Merchant of Venice*—

"How far that little candle throws his beams!"

Well, that radiation is the real "soul" of the candle, its whole object and meaning.

When the Beacon fires were lighted all over England, in the reign of Elizabeth, to give notice of the approach of the Armada, those fires in due time went out and left nothing but dust and ashes, to all appearance. But they had done their work, they had stimulated the enthusiasm of the people of England, and the Armada was defeated. They were lighted to send a message across space. *The fuel itself was nothing of any* consequence; nor was the residue left

behind. The illumination or radiation then produced, the whole object for which they were lighted, was the important thing. And that illumination is going on still! An astronomer could reckon how far those beams have now travelled. They have not been obliterated, they are coursing through space still. Just as we see the light of a distant star or a nebulous cloud which has been travelling for 800,000 years before it reaches our eye—for that is how we see for instance the great nebula in Andromeda, quite visible to the naked eye on a dark night, we see it as it was 800,000 years ago—so an observer with a sufficiently sensitive instrument could detect the light of the Armada beacons still. Therefore I say the illustration is a good one; and suggests, rather than negatives, the immortality of the soul.

An analogy proves nothing, of course; but this candle illustration of Sir Arthur's representing death as a complete extinguisher, has perturbed many good people quite

unnecessarily. Perhaps, in his kindness of heart, he may welcome the point of view of a friendly scientific colleague, and be glad that bereaved persons can be relieved of their distress; even though he feels compelled, in the interests of orthodoxy, to disagree with some of my other contentions.

To sum up:—Mechanism is a reality, but it is not all: it needs guidance. And there is far more than mechanism in the Universe. Evolution is a genuine process, but there are things which no physical evolution can rationally account for. A poet is able to express these things better than I can. In reviewing Sir Arthur Keith's Presidential Address to the British Association in 1927, Mr. Alfred Noyes writes thus in *The Sunday Times* for the 11th September 1927 —

> "There was a time when the solar system was in a gaseous condition. Time, stretched into millions of æons, is not an explanation of the evolution of Westminster Abbey from a gas. We must not be blinded by the multiplicity of intermediate details Suppose that Sir Arthur

had seen the process of evolution passing before him as quickly as a moving-picture, from an hour when the planet was lifeless, up to the hour when he saw three crosses on a hill, and heard a voice crying, '*Eloi, Eloi, lama sabacthani.*' . . . Would not that weird and terrible vision demand, even from a savant, more explanation than chemistry can give us? Was this, too, due to a 'merely quantitative' development? We are intellectually and imaginatively asleep to the overwhelming mystery that surrounds us on every side."

4 *The Mechanism of Survival*

In the last two chapters I have attempted incidentally to show the combined strength and weakness of the materialistic position. Its strength lies in the fact that apparently every psychic or mental happening has a physical concomitant; or, in other words, that life and mind have to be embedded in some physical vehicle, and that all operations, not physical only, but every kind, are conducted in accordance with a regular system of law and order, which can be explored and gradually understood by science. The mind of man is not something outside nature, but is a part of the whole, and harmonious with all the rest. The physical vehicle of mind may not as yet be fully apprehended by us, but experience tends to show that there is a physical vehicle in every case; or in other words, the psychical and

the physical are interlocked, so that each is a portion of an all-embracing Whole.

Hitherto the only physical vehicle known to us in the service of life and mind has been some form of matter; but it would be a mistake to assume without proof that organised matter, such as brain, is the sole and necessary instrument without which mental operations cannot go on. Matter is that part of the physical universe which makes direct appeal to our senses; it is that which displays the activity of the animal and vegetable kingdoms. The processes which go on in the complicated structure of organisms can be followed into singular detail as knowledge increases, so that these processes repay a lifetime of study, and are sometimes thought to be, not only coherent, but complete and satisfactory and final in themselves. The strength of materialism lies in the rational character of these material processes. The weakness lies in the assumption, the gratuitous and unfounded assumption, that those material processes are

all-inclusive, and demand that nothing else shall be taken into account.

But already experience has shown that there are many other things, even in the physical universe, besides matter; things for which we happen to have no sense-organ, and which therefore are apt to elude observation, so that careful enquiry and discovery have been necessary to bring them to light. To this category belong such now familiar agents as electricity and magnetism, which for all practical purposes were unknown to the human race even a few centuries ago. Electricity and magnetism belong to the physical universe, but they are not primarily apprehensible; their activities are only indirectly displayed by matter, and therefore they have to be indirectly apprehended by us. They can only be explored by means of material instruments: we have not grown accustomed to them through our senses, as we have to the different forms of matter, and consequently we often feel puzzled as to their nature. Such forces as

gravitation and cohesion belong to the same category. We know that material bodies fall together as if they attracted each other; but we have very little notion of why they do so. The tendency to fall together is only conspicuous when one at least of the pieces of matter is huge. The fact of gravitation is forced on our attention by the behaviour of bodies near the earth; but had it not been for the generalisations of science, we should never have discovered that there is the same kind of gravitative attraction between two pebbles, two bits of wood, two books, two objects of any kind. The force is too small to be appreciated, but it certainly exists; and the fact of this what we call " attraction " across empty space, has led us to postulate the existence of something in between the particles of matter, something tenuous which fills all space, something which is essential to the activity of the material world, but which in itself eludes our senses, so that its very existence can be doubted, although it is probably the most real and substantial

thing in the physical universe. This, which we call empty space or ether, is what interpenetrates all matter; it extends to the furthest star, there is no break in its infinite continuity, and it is now suspected of being the raw material out of which matter has been made.

To carry on and substantiate the strength of the materialistic position, while at the same time admitting that matter alone is insufficient for an explanation, it is natural to frame the hypothesis that this etheric medium may constitute the physical vehicle for life and mind when they are dissociated from matter. If there is a real entity which fills all space, it is unlikely that it is not made use of for vital purposes; and if it be true that a physical instrument or vehicle, some kind of mechanism involving rational processes, must accompany every thought and every mental operation, then the space-filling entity suggests itself as competent to do all that is wanted. To suppose that mind cannot exist without matter, is weak, gratuitous,

and inconclusive: but to suppose that mind requires for its activity *some* physical vehicle, though it may be of an entirely supersensual kind, is in analogy and accordance with all the rest of our experience. Mind may always require a body or mode of manifestation, but that "body" need not be formed of matter, and need not appeal to our present senses.

Now this view of existence has a bearing on the problem of survival. Instinctively scientific men feel that in connexion with every kind of activity there must be some physical process which can be investigated; they are not content with the idea of a totally disembodied spirit. Instinctively they seek for something physical; but hitherto some of them have made the mistake of assuming that the adjectives "physical" and "material" are interchangeable terms, and that when the brain and nerve systems are left behind there is nothing to take their place. That however is going beyond the facts. Indeed there are many operations

going on in the nerves and brain cells which are not yet fully understood, and will not be fully understood until the etheric connexion between the particles is taken into account. And when that connexion is better understood, it will be perceived that the matter particles are after all a secondary consideration; they have been extracted from animal food and are constantly changing: no sort of identity can be associated with them. The motions of the particles cannot be the primary activity, though they are the means by which our senses are affected, and therefore the means through which we study the more recondite operations of which their movements are the outward and visible sign.

When this idea is fully grasped,—and admittedly it takes some time to grasp it,—many of the arguments and analogies against survival break down; for as a matter of fact we never find things going out of existence, though we do find them going out of our ken. Anything which enters the

ether goes out of our ken; but in that new vehicle it continues, whether its subsequent history can be traced or not.

Past and Future

It is possible that the ether can automatically retain a record of the past capable of being deciphered and interpreted by intelligence. By suitable devices records may indeed be incorporated in matter, as in photographic plates and gramophone disks, but, like all material aggregates, such records fade or wear out, whereas the clarity of an etheric record continues undiminished for ever. When we look through a telescope at a nebula or star cluster we are gazing on the distant past—thousands or even millions of years ago—and extracting information from it. Thus is the past brought to our present apprehension. Not by such aid can we directly apprehend the future. Yet we can anticipate, plan, and to some extent predict: and what we can thus do consciously we may be able perhaps to do more mystically by in-

tuition or inspiration. It becomes a question well worthy of attention, how far the future is accessible, whether it is decipherable to beings of any kind, whether it in any sense already exists, and what power our faculties have of catching glimpses of the future as well as of the past. Unfortunately this enquiry is at present hampered by obsolete legislation; the common sense of mankind has decided that the future is hopelessly inaccessible. But the common sense of mankind has before now decided many other things which have turned out wrong. A spherical and revolving earth, flying annually round the sun, was repugnant to common sense at one time. The intuitions of genius may be a guide worth following up and submitting to verification: the presumptions of uninstructed ignorance are apt to lead us astray into positions whence extrication is troublesome. Security in a false position devoid of any real foundation can only be sustained or bolstered up by the abominable resources of persecution: a brutal buttress of blundering

bigotry which Ecclesiastics and Legislators have not scrupled to employ in the past.

Direct Evidences of Survival

Survival however is not to be established on grounds of analogy or by arguments of probability: it must be proven by direct experience. Individuals who have died must demonstrate their continued existence by trustworthy evidence. That may not be easy, it might not be possible. Experience must be the judge: we cannot decide what is possible or impossible, except by trial. Those who have studied the matter consider that the evidence is good, and that some individuals have proved their survival: that is to say, they have demonstrated that their individual mind and character has survived the death of the material organism in which they were at one time incorporated. We need not suppose that they are divorced from the physical universe as disembodied ghosts. Their physical existence may be just as real and substantial as ever, only they

are no longer associated with matter; but then matter is not the only entity: there is another more universal, more continuous, far more perfect mechanism, which it may be presumed they still inhabit and utilise. The strength of materialism remains, but in a glorified form. The theory takes a more comprehensive view of the universe than the narrow materialist thought possible. Whilst the essential and rational claims of the materialist are satisfied, his illegitimate denials are contradicted, and shown to be incompatible with the progress of scientific knowledge. The facts, the new and as yet unorthodox facts, range themselves on the side of a larger truth, and discountenance any narrow views based upon too limited experience or over-hasty prejudice. A study of those facts of psychic experience is just as important as a study of the behaviour of material organisms, and in due time they will attract some of the concentrated attention now devoted to other branches of knowledge. So a working hypothesis, capable of

assimilating them with natural knowledge in general, may be helpful, however much it may have to be modified, extended, and replaced by something better.

A reverent utterance of Thomas Henry Huxley, though often quoted, may here once more find a place :—

> " Science seems to me to teach in the highest and strongest manner the great truth which is embodied in the Christian conception of entire surrender to the will of God. Sit down before fact as a little child, be prepared to give up every preconceived notion, follow humbly wherever and to whatever abysses nature leads, or you shall learn nothing. I have only begun to learn content and peace of mind since I have resolved at all risks to do this."

5 *Problems raised by the Idea of Survival*

Suppose we let it be granted that accumulated evidence shows that human beings survive, a number of problems clamour for solution. What does survival mean in general? Why should it be limited to human beings? What line can be drawn differentiating one part of existence from another? It seems likely that all existence is perpetual. We certainly find that energy, for instance, continues without loss, changing form but always constant in amount; that death is not the characteristic and fundamental thing in the universe, but continued life. Energy need not always be associated with matter; it may pass into the ether, and indeed is constantly so doing. Not only from every star and every fire, but from all objects without exception, there is a constant interchange of energy between

ether and matter. Sometimes matter gains more than it loses, sometimes it loses more than it gains. This interchange constitutes the whole activity of what we observe; and the energy is never destroyed.

Is it the same with life? Not human life alone, but all life, animal and vegetable together? We do not know for certain, but it is a natural working hypothesis that the interaction between life and matter is temporary, while the interaction of life with the greater physical universe is permanent. In that sense survival is the law to which there need be no exception. But when we talk of human survival we mean more than that. We mean individual survival, the survival of personality and character.

Now survival only applies to things which really exist. If there is no individuality, then there is nothing to persist. Whether all human beings have sufficient personality to make their individual persistence likely, is a question that may be argued. Whether some of the higher animals have acquired a

kind of individuality, a character and wealth of affection which seem worthy of continued existence, may also be argued. There may be many grades of existence, many grades of personality, and accordingly there may be many grades of survival.

To illustrate this, and to get into closer touch with the subject, we may take some examples. The human body is composed of cells, and some of those cells have a life or vitality of their own. Some indeed, such as the white corpuscles in the blood, have an independent motivity, analogous to that of the amœba. They move with apparent spontaneity, they assimilate and digest and excrete; they subdivide and thereby increase in number: in other words, they have many of the attributes of independent existence. Yet they are essentially parts of a community: the communal life is the important thing, and by their activity they serve that communal life. They help to keep the whole body in health, and their individual life is often sacrificed to that end. In so

far as they are individuals, their individuality seems unimportant; it cannot be supposed to persist.

Many examples of communal life may be adduced. For instance in a hive of bees it would seem to be the communal life that is the important thing. The individuals go about their business in an instinctive manner, and willingly sacrifice themselves for the good of the community. Their individual existence is short and strenuous: they speedily succumb to overwork or to the dangers encountered, but the community goes on. Moreover it is instructive to realise that their specific activity depends not only on themselves but on their surroundings. They carry on whatever work is necessary in the particular place they find themselves. If wax is needed, they proceed to make it: if wax is provided, they proceed to shape it: if they find it already shaped, they fill it with honey. Any one bee does what is wanted at that particular place, adding to the labours of his predecessors the

quota demanded. The guiding influence seems represented by a communal instinct which does not belong to the individual but to the whole community.

It appears to be much the same with the cells of the body. Where a hair is required, there it is built up by the cells which find themselves in that position: where a nerve needs renewal it is renewed. And so the parts of the body are constructed and maintained; and the waste products are cleared away automatically and instinctively, without any attention from consciousness, so long as the body is in a state of health. The cells can be diverted from their proper work by abnormal secretions and poisons, and then abnormal structures are produced, with resulting pain and perhaps death to the organism as a whole. The organism may have an individual identity, but the cells composing it apparently have not. The ingredients in food are sorted out and planted automatically in the place required by the whole organism, the identity of which does

not depend on the identity of the particles, for they are in a constant state of flux.

At a lower grade we find something of the same sort even in inorganic nature. What constitutes for instance the identity of a river, the Tiber, or the Ganges, or the Nile? We recognise that the river has a sort of identity, but it cannot depend on the particles of water which constitute it. It may be said that the identity of a river is determined by the shape and locality of the channel along which the particles move; but even that is liable to change from time to time; yet we recognise it as the same river. The river therefore has a certain individuality, displayed by the stream of particles, and occasionally it has been personified as Father Tiber, Mother Ganges, and the like. But this is obviously a fanciful personification. There is no real soul or personality, or anything which calls for persistence beyond its terrestrial and temporary manifestation.

An identity of this general kind seems to

belong to all vegetables and to the lower animals. There is no need to postulate permanent personal existence in their case. The question only arises when the life of an organism has reached a stage at which the elements of mind and consciousness appear, when the action becomes more than mechanical, when it shows signs, not only of accumulated memory, but of incipient reasoning power, leading to purposive action, based on accumulated or inherited experience. Purposive action is indeed often based not upon the laws of heredity alone, but upon experience acquired by the individual, so that in some sense it knows what it is doing, and spontaneously and individually tries for some end, or acts with some apprehension of the future. An intelligent creature is guided, not merely by the present, but by anticipation and hope.

It is not easy to say where this element of consciousness, conscious striving for an as yet unrealised end, first began to enter

into the animal kingdom; but we see signs of it in the higher animals, at any rate in those that have become domesticated; and we are well aware of these faculties in ourselves. At some stage or other, conscious planning, or what Aristotle called "entelechy," entered into the scheme; and this element we may well call the germ of the soul. As a working hypothesis we may conjecture that where a soul exists it means the emergent evolution of something higher than ordinary life, of something which has a personal aspect, and of something which, if real, is likely to persist. If it is a very minute fragment of personality, then its survival will also be minute and fragmentary. Only when it becomes considerable and dominant will it have a considerable and dominant survival. In so far as a thing is real, it will not go out of existence; it will survive for whatever it may be worth.

Clearly there are grades of existence or grades of value; so in a sense there may be grades of survival. Surely not, it may be

objected, there is either survival or there is not; there cannot be partial survival. No, but a small and trivial thing may survive in a small and trivial way. A great love endures; but a little bit of affection may still survive. The problem is one of reality. Only reality persists. But then, on the other hand, all reality persists. A cloud or a crowd is dispersed and scattered and ceases to be. But *that* was *not* a *reality*, it was a *mere* aggregate of atoms or of people: when it was dispersed the individual components continue. The reality belonged, not to the assemblage, but to that which gathered them together. The emotion, or the guiding principle, which convened a League, a Parliament or an army, may continue and may alter the course of history. A written document may have an effect long after the document has been destroyed. The soul of a poem, or of a Treaty, is not in the black marks on a scrap of paper; nor is its reality dependent on the physical vehicle by which it was conveyed to others. It is the soul of

such things that is real, and it is that which persists.

So it may be with our bodily organism. Each organism is an assemblage of particles in a state of flux and change. The cells have a communal existence, but the permanent thing which put them together, and which by their aid has accumulated experience and developed a personal character, is not dependent on them for its identity; and it can endure long after they have been dispersed and scattered.

These being the possibilities, the remaining question is one of fact. The evidence for human survival does not depend on argument but on experience. There is a growing amount of evidence that human personality does really persist, that individual people have not gone out of existence. That evidence must be critically examined and subjected to scientific enquiry, and if it stands the test, it must be admitted: it must be accepted as one of the facts ascertained in the process of scientific discovery,

whether we understand it or not. All that the argument has done is to show that there is nothing irrational in the idea, that we need not turn our backs on the evidence because it appears to be demonstrating something impossible. The thing is possible enough: no one has a right to say that it is impossible. Our business is to find out what is true. If there is trustworthy evidence tending to show that humanity has attained a grade at which a real and permanent personality has developed, then that evidence can be accepted. If the evidence goes further, and shows that some of the higher animals have reached such a grade, then that evidence can be accepted too. We have no right to draw an artificial line and say, Thus far and no further. Nor have we any right to turn down actual evidence because of our irrational and perhaps superstitious preconceptions. We have no more right to do that than we have to accept or invent faulty evidence and imaginary facts, on the ground of our preconceptions or superstitions or

human longings. The emotions must be kept in their place. Things are not true because we want them to be true; but neither are they false because we feel they ought to be false. Human instincts and intuitions are not to be despised. The intuitions of genius are part of the facts, and have a weight and value of their own.

Fortunately in this vital matter we are not left to inspirations and intuitions. Cold-blooded direct evidence is vouched for, and this it is which must be examined without prejudice either way. And this it is which will ultimately convince all humanity of the truth of survival, and incidentally will in the long run enable us to realise more clearly what survival means, what physical mechanism is associated with it, what is its scope and how far it extends, and what bearing it has on the ultimate problems of reality.

Meanwhile Teachers and Clerics are faced with practical problems, and the next chapter is intended as an interim help.

6 *Practical Problems following on the Growing Proof of Survival**

I SYMPATHISE with the difficulties which people in authority feel in presenting to the laity details relating to survival, or in answering questions about exceptional phenomena and psychical research. I have felt the difficulty myself in a small way, and I often advise people not to touch the subject unless they are serious; for, unless they are competent and level-headed and sane in every way, it may be better to leave it alone. But there is a growing interest in the subject; we cannot shut our eyes to it; and I gather that many of the clergy want gradually to determine what their attitude shall be, and, meanwhile, to hear the impression which has been produced upon those who

* From an Address to Clergy, stenographically reported.

have studied the subject, and to what tentative theory they have been led.

A few enthusiasts tend to regard this subject as almost a religion in itself. Although I do not agree, I think it has confirmed and made real some special facts which are concordant with religion, and has even strengthened religious belief. For I take it that the preamble of all religions is the existence of a spiritual world; and we who have gone into the matter believe that we are in touch with the spiritual world. That is to say, that this world is only a small part of the Universe, and that life is by no means limited to the material embodiment we see around us now. There is something much more real and far-reaching than that, and we can get into touch with some other manifestations of reality.

Of course, that has been the subject of religion in all ages; and now some of those whose training has been mainly scientific are beginning to feel that by careful enquiry and examination they are arriving at the

same conclusion. Some of the facts, some of the traditional ordinary facts, in connection with it, seem frivolous or trivial. But that is not uncommon. Facts have so many different aspects. Any great subject may be regarded from the serious point of view, or from the frivolous point of view. The world is not limited to the serious. If a thing is big enough it can afford to have a humorous or a trivial side. Providence is not above attending to the fall of a sparrow. The standard scientific example is Galvani with his frogs' legs. He was jeered at in the early days of electricity because it only made frogs' legs kick. But it could make lightning flash too. So also with Newton's gravitation; it can pull down apples and toy bricks, as well as the moon and planets. Mother-love is as sacred as anything on earth, yet baby talk is trivial enough. So also characteristic humour and personality need not be, and are not, changed by the passage through death. We remain essentially ourselves. I mean that calling a

thing trivial is not damning. Some triviality is only to be expected in family conversation. Sometimes it is said that people who have gone into this subject are foolish people, sentimental and credulous. Well, many are not; but even if they are, is it not true that important things have before now been hidden from the wise and prudent? We cannot always judge facts by the people who get hold of them. The whole interrelation between religion and science is to some extent involved. We are living in the midst of a sort of revolution in that direction.

All through the last half of last century the mechanistic view of science, the materialistic view of the Universe, held the field. Attention was concentrated upon Matter, and in terms of matter everything was to be explained.

The problem before philosophy has always been the interaction of life and mind with matter; and, on the mechanistic view, life is a sort of epiphenomenon resulting from a complexity of organisation. Science

has been objected to from the religious point of view because it seems to exclude final causes, and always attends to mechanism. But that is the basis of science: it has to look for the mechanism in everything that occurs. An idea displays itself, and can only display itself, in an act; the brain and nervous system and muscular action are involved in all our operations.

Hence purely physical causes and effects are one part of truth; and, if we were always appealing to final causes—as used to be done in astronomy (it used to be almost irreverent to ask why the planets moved as they do!) —it would be equivalent to throwing up the sponge so far as science is concerned. Final causes may be the business of philosophy and religion, but not of science; there we are seeking, as far as we can, the physical, the chemical, the mechanical explanation. Those aspects are truly part of the whole: the only mistake is for those who so successfully and devotedly study material things to think that they are all, that they are

final, and to exclude or deny all the others. Nevertheless, it is true that in orthodox science spiritual causes have no footing.

The term "science" can be used in more than one sense. It may be used to include a careful study of all existence, a sort of general ontology; so that theology, for instance, as well as psychology, are sciences; but it is often used in a narrower sense, as meaning the detailed description and working theory of things that can be weighed and measured and timed. In that sense astronomy and physics and chemistry are the sciences which have approached nearest to perfection. Geology has only recently attempted an exact estimate of the ages of the rocks and of the earth; biology is only beginning to submit itself to mathematical calculation. So there are many grades or stages in scientific evolution, and we cannot expect a new or nascent science to attain full dignity all at once. Neither should we demand of a scientific enquirer that he should necessarily attend to every aspect of being:

the material or mechanical aspect may be quite enough to occupy his attention; the working out of vital and other *mechanism* is his particular job. There is rather an interesting article in the *Hibbert Journal* for January, 1927, by Joseph Needham, of Caius College, Cambridge, wherein he professes himself a neo-mechanist. He claims that the ordinary mechanistic philosophy has broken down, become almost extinct, and that there is a vitalism which is taking the field instead; but he points out that technical "vitalism" is too vague, and not science. In a series of Gifford Lectures trending in the same direction, called "The Sciences and Philosophy," the eminent physiologist Dr. John Scott Haldane adopts the principles of energy and of molecular behaviour appropriate to physics and chemistry, while strongly insisting on the utter inadequacy of Newtonian mechanism or materialism as a philosophy. He is anxious to treat everything on scientific lines, and to admit nothing that will clash with the

supremacy of the science of biology; accordingly he repudiates technical Vitalism, as taught say by Liebig, and is thus led to an intermediate position somewhat awkward to define. It is difficult at present for biologists and psychologists and physicists to co-operate, as they doubtless will in the future when the boundaries of organised knowledge have expanded. One may note a tendency now to try to exclude, from what is called "science" in the narrow sense, everything that is not metrical and exact and repeatable at will under laws that can be formulated. That is one reason why the subject we are thinking of to-day is not accepted; it is not metrical and exact; we cannot always repeat things; we do not know the laws yet; there is a great deal to be found out still. The knowledge is not yet properly organised. My position is that we must be guided by facts, must gradually be led towards a theory, and never give up truths merely because we do not understand or only partially understand them. I shall give you

a few of the implications which have been produced upon my mind, without asking you to accept them. We must gradually improve these implications by further study. There are many cases where science and philosophy seem to clash, just as science and religion have seemed to clash, and it is always because they are looking at different aspects of the same thing. We find that the physical world proceeds in a sort of cycle, going round and round, not exactly progressing, but changing, revolving round and round in a cycle; its object being, like the periodic motions of a loom, to evolve material of a different order—a progressive woven fabric of beauty and design,—the mental and spiritual emanating or emerging through and by aid of the physical.

Now there is a great tendency—and, indeed, all the difficulties about this subject are due to the tendency—to associate life and mind directly with matter, and so closely to associate them with matter as to be unable to conceive their existence apart from matter.

That is how materialistic or mechanistic objections to survival arise. If the brain is the mind, then, of course, when the brain is burnt or destroyed, the mind has ceased to be; people cannot see how existence can go on apart from a material mechanism. Is there any life or mind beyond what we recognise as displayed by matter on this earth, or on similar earths elsewhere?

Incidentally, we are confronted with the question, how many other worlds are inhabited besides this. It seems an important question, especially if it is thought that unless the matter in the Universe is inhabitated it is serving no useful function, a thing that might be true if there were no other possibility for life and mind to exist. Now that great physicist, Dr. Jeans, who is also ex-President of the Royal Astronomical Society, has come to the conclusion that a solar system is a rare thing in the Universe. At one time he was even inclined to think it unique. There is a great deal of matter in the Universe, but the

birth of a solar system—the bringing of planets out of the sun, or out of any other star like it—seems to be an exceptional occurrence. It has been traced to the passage, the so-to-speak accidental passage, of another sun not far away.* The theory is that the sun at one time was perturbed by another star moving somewhere in its neighbourhood, in a way that made our sun shoot out a long spindle of gaseous material towards the disturbing star, thick in the middle and tapering at each end. That being left behind, slowly congealed and broke up into planets, small planets at each end and big ones in the middle. But an occurrence like that must be rare; very seldom do stars get near enough to each other to do that.

Alfred Russel Wallace also had an idea, based on less adequate grounds, that this earth might be the only inhabited planet.

* A tidal theory of this general kind was mooted by Professors Chamberlin and Moulton of Chicago; but it has attained greater definiteness and precision through the work of Sir James Jeans.

Probably that is an extreme view, and unlikely; but we are bound to admit, as the result of scientific investigation, that the occurrence of habitable worlds is less frequent than we might have imagined. Besides, the earth itself has only become what we call "inhabited" in quite recent times,—a minute fraction of its whole history.

Now look at the question from another point of view. Most of the matter in the Universe—thousands and millions of times more in amount than the earth, more than the sun—is far too hot to be inhabited. All the stars that we see are blazing hot; and, in addition to the stars, we see the spiral nebulæ much farther away in space. Do you realise that these are enormously distant, fresh milky ways, fresh cosmoses?

The Universe is the most extraordinary thing; you need not be surprised at anything that happens in the Universe. There are those spiral nebulæ, the birthplace of constellations of stars; and all those gaseous stars some of them a million times

as large as the sun, cannot be what we call inhabited. Yet that is where most of the matter is. You cannot imagine the conditions there. Even the atoms that we know can hardly exist there; Eddington considers that most of our atoms would be broken up into electrons. Only here and there will you find a body like the earth, comparatively cold, not far from absolute zero. The earth, relatively speaking, is quite cold. Instead of being millions of degrees from absolute zero, it is only 300 degrees. So 92 varieties of atom have become fairly stable here; molecules also have been able to form and aggregate into protoplasmic compounds which can be inhabited by life. That is what we find—however astonishing—to be true. But where did that life come from? Where was that life before there was any matter fit for it to inhabit?

The psychical and the physical always seem to be related to each other. There is an interaction between the psychical and

the physical; whether it is necessary always, I don't know, and we are not likely to know. But by the physical we mean something more than merely matter. Matter is physical, but the ether is physical too. Many physical things are not material. Magnetism, light, and electricity, all belong to the ether. I have gradually come to the view, which was thrown out as a speculation in the middle of last century by Professors Tait and Balfour Stewart, in their rather famous book, *The Unseen Universe*, that the main realities of the universe are not in matter at all, but in the ether of space. If there is any sense in location at all, applied to non-material things, therein is the whole of the spiritual world; and only here and there has it had any interaction with matter. I go further, and hold that in so far as we act on matter at all, we really act on it in a secondary way. Our relation with the ether is primary; our relation with matter is secondary. We act on matter indirectly through the ether. The ether is responsible not only for gravitation,

and for electricity and magnetism and light, for elasticity also, and all strain; it is also responsible for cohesion, for linking together all the particles which would otherwise be disconnected. It is through the ether that we ourselves really act upon matter, and I suggest that it is there, in that connecting and all-permeating medium, that we must look for the permanent basis of life.

Here and there, however, it has been found possible for individual life to associate itself with certain molecules of matter; that is what has happened here, and that is what we have grown so accustomed to that we cannot think of it as existing in any other way. And then we ask—Shall we survive? Survive what—our temporary and indirect and secondary connection with matter? You see that this question of survival, regarded from my present point of view, is what we used to call a *histeron proteron*—"the cart before the horse." The marvel is that we are associated with matter at all. That is the peculiar thing. I used to say

that death was an adventure to which we might look forward. So it is; but I believe that really and truly it is earth-life that is the adventure. It is this earth-life that has been the strange and exceptional thing. The wonder is that we ever succeeded in entering a matter body at all. Many fail.

Our association with matter is foreign and difficult and puzzling. It is evidently a very important episode. We are regarded, it seems to me, by the higher powers, as in a difficult position, worthy of help, and needing it! Our association with matter is temporary; that we can go on without matter must seem to them comparatively obvious. Life is, as it were, something that condenses upon this planet, and then evaporates whence it came. The attempt to explain life in terms of matter has failed. Mechanism has its uses, and the material body is a temporary instrument. It is a familiar experience that matter has to be coerced to do what we want. A great many

of our difficulties are due to the refractory nature of matter. Our material bodies are troublesome: troublesome to put on; troublesome to shake off; troublesome to deal with in many ways. They are not really ourselves: they are an instrument to be used for a time—a short time.

But it may be said of that view, If that is so, it seems to require a kind of pre-existence, an admission that we existed in the invisible world, in the ether or in space, and then condensed on to matter and moved about here for a time, and then went back whence we came? Well, in a sense that is my view; but we must discriminate between mere life, on the one hand, and individual life, personality, on the other. I do not say that the *individual* has pre-existed. What I have said about life in general would apply to every kind of life—animal and plant life also. No kind of life has been explained in terms of matter; I do not believe it can be explained in terms of matter. But most living things have no personality. When the question

Now you may say that that is a speculation. Of course it is. But my object is to try and show the meaning of things as they have gradually appealed to me from the study of physics and psychics; and if it is not true something better is true. But I would point out to you that it has the support of the poets; that is to say, the support of genius and intuition. There are many ways of arriving at truth. Scientific investigation is one of them, a slow and laborious way, a hard way, though it makes a solid road if we wait long enough. But genius may have inspiration. The intuitions of men of genius are not by any means to be despised, and the outlook of poets is instructive. When Wordsworth says, "Our birth is but a sleep and a forgetting," he is saying something like what I begin to think true. Again there is the phrase, "Descent into generation." And again, "the spirit yearns to mix itself with clay." We can imagine that, every now and then an opportunity arises for spirit to enter into relation

with matter, and to become gradually an individual, and develop a character and personality which will persist; so that there is almost a kind of "choice" whether we enter into life or what sort of life we enter into. In that sense we may be said—with apparent absurdity, but possibly with some kind of truth—to select our parentage; and thus may *some* facts of heredity be accounted for.

Now, I repeat, that earth-life is really the adventure, the puzzling thing, the exceptional thing. We are incarnations: we have entered into matter; and yet we retain some connection with the spirit world, with the real world, where we are more at home than we are here. Thus occur visions, intuitions, even the "direct voice," all manner of phenomena such as we are gradually becoming acquainted with, as the Ancients were. (Cf. 1 Samuel iii. 8; Matthew iii. 17; John xii. 29; Acts ix. 7.) [See Numbers xxiv. 16 and Acts x. for lucidity in a state of trance.]

We also experience—whether we recognise it or not—the guidance and help which are vouchsafed during our incarnation. Indeed, this view that I have been trying to put forward of the incarnation of spirit with matter for the purpose of development, or for some high purpose,—either developing character or performing some sort of service,—is surely consistent with the essence of the Christian faith. That Incarnation was much more than our ordinary association with matter but was otherwise of the same kind.

But then we are up against the scientific side of things. It is contended that we cannot admit interference from another world: that we cannot allow for assistance by higher beings. The conservation of energy has been supposed to prevent that. I reply, No, for it doesn't prevent us from helping each other, or from helping the lower animals. The argument from the lower animals is very helpful, I think, when you have to deal with such things as prayer and miracle, and ask if intervention is

scientifically possible. To the lower animals we are higher beings, and we perform what to them are miracles, and we can answer prayer. If a cat asks to have the door opened, we can open it. If a bird or a bee is trapped in a room we can liberate it, without being asked. That is to say, the ordinary difficulties about prayer and miracle evaporate when you think of us as the higher beings and them as the lower. The real doubt of those who oppose the religious view is as to whether there are any higher beings in existence. If there are, we are not likely to know the extent of their powers.

Anyone who can suppose that man is the highest being in the Universe is in a peculiar position. If you are familiar with the extent of the Universe, its marvellous potentialities and wealth of existence, and can think that there is no mind that understands it better than we do, you must be either strangely credulous or else—I would not like to say stupid, but can think of no politer term.

But now we must go on to say, "Well, that is all very well as a speculation, but what about the facts? What facts are there capable of establishing survival after the discarding of the material body?"

Relevant facts are those exceptional occurrences which to some have seemed frivolous or trivial, but which in reality demonstrate a power of communication between those who are normally not associated with matter and those who are.

I, and many others, are growingly aware that communication between intelligent beings is not limited to the familiar methods, by voice and writing, telegraphy, and those other methods that we have invented and commonly use. We occasionally have telepathic communication with each other, and we can have communication with those who have lost those material pieces of mechanism that we commonly employ. People have grown so accustomed to a material intermediary that they cannot imagine any other kind; but we find that there are other

kinds. The facts proving this have to be studied and gradually absorbed. By such study we gradually become convinced that those who have departed are not really isolated from us. We are not so isolated in the Universe as we think. It is true that the body, this vesture of clay, shuts us off from a great deal; but material limitations are consistent with common experience. In every Art we have to use instruments made of matter, and the results achieved do not come up to the ideal of the artificer or composer. Our reproduction of music is not the way in which the composer hears it. Beethoven, when he was deaf, could hear the music that he was composing; he heard it in his soul. As Shakespeare says :—

> "Such harmony is in immortal souls;
> But whilst this muddy vesture of decay
> Doth grossly close it in, we cannot hear it."

We are here limited by our mechanism, limited by our senses, the animal senses that we have inherited from the animals. We

have got an animal body, and have many difficulties associated with it, but we have a divine spark which is something from the other region, the unseen, brought into this transitory field of existence. Here, indeed, we are hampered continually. Our vision is limited. We have no real outlook, except in moments. The vision does come sometimes; but for the majority, we are shut up in this present transitory body, and we wonder if we shall survive the experience! Surely, as I said before, we are putting the cart before the horse, when discussing the question of survival.

But still we can face the problem. Can we *prove* that memory and character do survive? We have to prove it by psychic experience. By employing proper means of communication—somewhat as you do when you want to telegraph to a distant friend—you find that the person you knew is still there, that he remembers the things that happened, that his character is unchanged. Memory and character, therefore,

are not in the brain. The brain is material, the instrument for recording speech, for enabling you to speak. People say when the brain is damaged you damage the mind. How do they know you damage the mind? Can you damage the mind with a brick-bat? The brain can be damaged with a brick-bat; that is injury to the machine. The mechanism is interfered with; the machine doesn't work; the instrument cannot play; but the music, the character, the reality, is not destroyed. Merely the manifestation of it is stopped.

The same with death. It prevents the manifestation; it prevents at least the easy manifestation. But, fortunately, it has been found that under certain conditions occasional communication can still continue, so that those who have lost their own instrument can use another; and thus we can prove that survival is a fact. We find that personality and character and memory do survive.

If to any of your disciples this is news, it

surely is the kind of news "powerful enough to change the whole mental and spiritual outlook"; which is what the Archbishop's Committee reported as the right kind of news, if the preaching of the Church was to "grip."

You see, I have been arriving at this familiar though controversial conclusion about human survival in rather hind-before fashion. I have done it purposely. I am trying to give you a theory, to which I am being led and on which I am working, of the unseen. My thesis is that the spiritual world is the reality, and this life only a temporary episode. I have given you that as the conclusion that is to be drawn from certain facts, and also as the intuition that has been more or less in the higher human mind all the time. If you will look into the facts you will find they demonstrate the reality of a spiritual world; and that higher mode of existence dominates the whole aspect, the whole religious outlook.

And have you realised that this view

is consistent, not only with the psychic phenomena which we gropingly investigate, but also with the highest thoughts to which man has attained? You can thus realise that psychic facts are wholesome and good for humanity, and that they cannot but be helpful when they are rightly used.

I shall try, before I have to go "upstairs," to put these things in a more satisfactory, a fuller manner, for I have studied them all my life, and the Ether is to me a reality far beyond what I expect it is to you. You think it fanciful, but it is not. It dominates the working of the whole of life, and if the spiritual and the physical are always associated, then it is there that we must look for the reality and the method and the meaning of how these apparently diverse things can interact. We shall gradually find that matter, to which we are apt to give such exclusive attention, only looms so large in our view because of our animal senses. Poets deal with Reality, not illusion. Ultimate realities are in the unseen, and are

things of which our ordinary daily life may leave us quite unconscious. Mind inhabits and primarily acts upon the ether. Only with difficulty and in secondary and subordinate fashion does it act upon matter. Our senses only respond to, and give us information about, matter; that is why we have developed a lop-sided idea of the Universe, and often fail to recognise that all ultimate realities, all our highest conceptions—poetic, artistic, yes, and scientific—lie in the unseen, the immaterial, the ideal. There in that etherial region we shall be freer from limitations, and there our spirits will be at home.

7 *The Meaning of Existence*

It may seem presumptuous to sit down and consider what the Universe is for. What is the object of all the masses of matter that we see in space, and especially what is the use of this planet Earth, with all the complications and innumerable details which have been gradually deciphered or brought to light by scientific explorers? And yet, though our ignorance is still great, human knowledge has increased to such an extent during the last and present centuries, that a survey of that kind is not irrational, and indeed in a sense is inevitable.

We find ourselves on one of the innumerable globes of matter distributed in space, at distances apart such that they do not interfere with each other, except in a helping manner. Not scattered about at random, as are the atoms in our air which

continually collide with each other, but distributed according to a system of law and order, so that they pursue their regular orbits in peace and harmony for a tremendously long period of time. During that time many things have happened. The primeval gas has separated into great masses; and these have split up into smaller ones, which certainly in the case of the Solar System revolve round one of the bigger masses. These bigger masses are blazing hot, owing, as we now strongly suspect, to the clashing together of the electrical constituents which compose the atoms of matter. But the smaller masses are comparatively cool, and would indeed be quite cold were it not that they are in the neighbourhood of one of the bigger ones, round which they revolve as a sort of family; thereby being preserved at a reasonable and convenient temperature for chemical processes to go on, and complicated molecules to form.

Under those conditions we find that it

has been possible for some of the more complicated forms of matter to become "animated," as if a mysterious something that we call "life" had entered into relation with them, inhabiting or utilising the assemblage of complex molecules which it is able to build up in definite shapes for its own manifestation and development. In that way, by partially known but mainly obscure processes, a great variety of vegetable and animal life has made its appearance —at least on this planet: we do not know at present what has happened on the others. Biological study is entirely limited to this one; about all the others we are in doubt.

Limiting ourselves to this planet, as in our present ignorance we must so far as the study of life is concerned, we perceive that the animal and vegetable organisms are auxiliary and reciprocal to each other; so that the chemical processes which go on in the one are helpful and make continuously possible the other. The vegetable organisms have the power of directly utilising the

rays of the sun, and are thereby enabled to extract nutriment from inorganic materials; they absorb both from the air and from the soil certain ingredients which they incorporate into their own structure, and build up molecular assemblages of extraordinary beauty and complexity. Upon these the animal organisms are able to feed, and thereby in their turn build up still more wonderful structures, endowed with the power of locomotion, provided with sense-organs, through which they can appreciate and ultimately reason about the operations which they see around them, and of which they form a part. We realise in fact that animal life has developed far beyond what is possible to the vegetables, and that, at least in the higher forms, life has blossomed into mind.

Of the first beginnings of life we know little or nothing, and where to note the first beginning of mind we cannot draw the line. We know however that, at least in some specimens of the human race, mind

has already reached a marvellous development; so that we are accustomed to a display, not only of intelligence, but also of emotion, aspiration, and will, far beyond anything that could have been expected from its early beginnings. It seems incredible that man's achievements can be the outcome of any material aggregation, and people have been led to suppose that they can be due to nothing less than an influx of a spirit akin to the Divine, associating itself with and manifesting itself by the material organisms that under its influence have been constructed.

Philosophic attempts have been made, and are still being made, to unify the apparently distinct but interacting things, life and mind on the one hand, and matter on the other: and these attempts may some day meet with success. But that point of view is beyond us at present. We have to take things as we find them; and what we find is that life and mind certainly interact with matter for a time, though what their

ultimate nature may be we have hardly yet in science begun to consider. We have to leave those high gropings to philosophy and to religion. Such information as we can get on those topics is mainly limited to the intuitions of philosophers, poets, and saints. As men of science we have to take a prosaic view of existence, and study things one at a time by the method of abstraction; some attending mainly or solely to the material side, others attending to the mental and spiritual side; the two groups sometimes disputing among themselves as to the best way of expressing that mutual interaction between them which is a common experience of mankind.

Let us then see whether by contemplating separately the two aspects of the Universe, without dogmatism but merely with open minds, we can formulate any fundamental difference between the two aspects, in such a way as possibly to give us some faint idea of the meaning and purpose of the Whole.

Looking first at the material, or rather

the physical, side of the world, we find not matter alone, but energy. The organisms that we see on the earth are composed of matter; but they have been built up by means of energy derived from the sun. All the parts of the physical aspect of things are mutually dependent, after the same sort of fashion as the animal and the vegetable are mutually dependent. The energy which has built up the organisms has been received in radiant form, that is to say by a process of radiation reaching the earth through empty space, that is through space devoid of matter; for between the sun and the earth there is nothing but what we call vacuum.

We have learnt, however, that radiation consists of waves or periodic disturbances, which travel at a definite and measurable pace. We have learnt also that they are not conveyed by matter; and hence we feel bound to suppose that they are conveyed by something else,—something which is coextensive with space, extending far beyond the sun, away without breach of continuity

to the most distant visible star. For it is only through the revelation thus brought to us that we are aware of the enormous extent of the universe, an extent that to our ancestors would have seemed utterly incredible, and that excites the astonishment and veneration even of astronomers.

The substance, whatever it is, that conveys light, also transmits gravitation; and we experiment upon its other properties in the sciences of Electricity and Magnetism. What name we give to it is of no importance; some prefer to call it space, though it is certainly space endowed with physical properties; and some therefore prefer to call it ether. But whatever it be, it is something in which all the masses of matter are immersed, which, moreover, is continually reacting with them, and giving them their energy. Energy received by matter takes the form of locomotion: available energy in the ether takes the form of strain. And all the activities that we see around us are due to the interchange of these two forms of

energy. There need be no waste or dissipation of energy, it is constant in quantity, but continually changing its form, passing from ether to matter, and back again. This may not be obvious, and I do not suppose it is obvious; but it is what a study of physics leads to, and may be accepted for the present as a statement of fact. Such a process, if conducted with perfect efficiency, that is without any waste, is called a reversible process; and a word must be said about this principle of reversibility.

We are acquainted with many partly reversible processes, though most are imperfect ones, accompanied with some waste. An engine is a reversible machine: if driven backwards, it acts as a pump. The engine of a motor-car, which can drive the car uphill, if left in gear while going downhill, is working as a pump, and might be made to store the energy of the descent. A wound-up weight need not be used to drive the hands of a clock, it might be made to raise another weight, either a big one

through a smaller height, or a smaller one through a greater height. Similarly a waterfall might be used to pump all the water to something less than the height from which it came. Or it might be used, as it sometimes is, for pumping a small quantity of water to a much greater height. It is true that with our imperfect machinery the work got out of a machine is always less, though it need not be much less, than what is put into it. It cannot be greater; even if friction were avoided.

A train running downhill on smooth rails accumulates momentum, which could be utilised for running the same train uphill; and if there were no friction, such an operation might be reversible, so that the train could rise to the height from which it descended. In a pendulum, friction is reduced to a minimum, and accordingly the bob of the pendulum, raised and let go on one side, swings down and rises an equal height on the other, or very nearly an equal height, and then swings back and continues

swinging for a long time. If it were completely efficient, that is if there were no waste of energy, a pendulum once started would go on for ever. As it is, a very heavy long pendulum can continue to swing for the best part of a day, the energy at the top of each swing being in the form of gravitational strain in the ether, and at the bottom of each swing being in the form of locomotion of matter. This simple example is typical of a reversible process, and though not perfectly reversible, is about the nearest mechanical approach we can get under present conditions.

Another example, not so unfamiliar now as it would have been last century, is a dynamo charging a battery. The dynamo can work equally well as a motor. The energy put into it is stored in the battery, and the battery can then drive the dynamo at a somewhat lower speed. The process is used on a large scale in factories for the transmission of power. And if two dynamos were coupled together—coupled by both

belt and wires—they would very nearly drive each other, the balance of energy that would have to be put into the system being quite small, and only needed to overcome the inevitable friction and resistance losses. It is in this way indeed that the late John Hopkinson devised a method for testing the efficiency of dynamos. If they were perfectly efficient they would, once started, continue to drive each other without external propulsion. And some cranky persons have thought that perpetual motion could thus be achieved. It cannot, for there is always some waste. When dealing with matter, friction cannot be avoided. You cannot get quite so much out of a machine as you put into it, but in so far as it is nearly perfect you need not get much less. The test of a perfect machine is reversibility.

Now, though none of our machines is perfect, the universe, considered as a machine, is. There is a constant passage of energy from one form to another, from ether to matter, and back again, and there is no loss

by the way. So the physical universe is a reversible engine: its operations are cyclical; that is, they go round and round in a cycle, with no advance, no progression, but with constant and eternal repetition.

Parenthetically, I ought to say that there is some doubt at present whether this last statement is finally and absolutely true; some doubt whether matter is not gradually passing into the energy of radiation, and not getting back again. There is, however, a possibility that, under certain unknown conditions, the energy does get back again; so that matter may be reconstituted out of radiation. That question for the present remains open. I am going to assume that some day it will be answered in the affirmative, and, if so, then the whole physical universe is a permanent perfect reversible machine.

Contrast

Now attend to the other side of the picture, and consider the operations of life

and mind. In them we detect no kind of reversibility. What we see in them is real progress, development, evolution. The living organisms that we see to-day are a vast improvement on their initial stages. Life began in very lowly forms: that seems undoubted. But in the lapse of time it has risen in the scale, both in the vegetable and the animal kingdom, until we see such highly developed forms as the oak, the eagle, and the horse. Nor need we stop there. At present man is the crown of the process: and to go no higher, man has already shown what he can become by such examples as Plato and Newton and Shakespeare. There is nothing cyclical or reversible about the evolution of man, unless indeed in a fit of lunacy he devises instruments to secure his own destruction. But there is nothing in the nature of things to necessitate that. If he continues a rational being, he can rise to heights beyond our present contemplation, and doubtless in due time he will. He has begun to look round

and take stock of his surroundings, to take control of the energies of nature, and to utilise them for his own convenience, and ultimately for his own advancement. He can waste energy if he likes, but there is no compulsion. There is indeed no compulsion either way. A man can drive his motor into a ditch or over a precipice if he chooses; but he need not choose. He has got to a point now where, within certain limits, he can decide his own destination.

The physical universe goes round and round, and repeats itself in regular orbits. Man need do nothing of the kind: history need not repeat itself. Ups and downs there may be. Progress and retrogression in certain localities there have been, and still may be; but on the whole man is rising in the scale, and apparently may rise without limit. This is real evolution. It was to make this possible that the physical universe existed. The cyclical operations of matter may be made to conduce to one great end, a growth in mental and spiritual values.

And this I take it is the meaning and object of the universe. What we see going on now is the spiritual utilisation of physical processes, towards a constant and unending progression, both for the individual and for the race. Evolution is an unfolding of latent possibilities; and the mechanism of the universe is subordinate to that great end. Evolution is more than the unfolding of a flower. The plant develops from a seed, it flowers and fruits, it brings forth seeds, and so begins again. But this is hardly a representation of true evolution. Even in plants and animals there has been slow true evolution; for the species now are higher than they were. Living organisms do not belong only to the material world: they exhibit the interaction of a progressive life.

But man exhibits more than that. His history shows the development of a progressive mind; and in true evolution there need be no going back. Perfection in his case is not tested by reversibility: he is not

a reversible machine. His body truly only lasts for a time, and then falls into decay; but the individuality, the personality, continues. The individual is more permanent than the race. I know for a fact that as individuals we survive the death of the body: the race cannot be expected to survive the death of the planet. But it has a long time ahead. We used to think that the sun might become extinct, or at any rate dimmer, in the course of some million years. There is no reason to think so now. There is an infinitude of time before the individual; there is presumably not an infinitude of time before the race, but everything points to a time which must be estimated in millions of centuries.

So that if man takes the reins in his hands, and with the help of Higher Powers aims at concentrating upon things of real value, no one can imagine what he may become. And our remote posterity, looking back upon the struggle, the constant effort that has brought man to his present position

and must surely continue to raise him in the scale, will realise that the trouble has been worth while. They will perceive, more clearly than we do, that in no other way could a perfect humanity have been developed from lowly beginnings; they will admit that immense tracts of time were necessary, and that all the reversible processes of physical or material nature have been devised and utilised for this great object—the evolving and perfecting of man as an immortal being of surpassing intelligence and beauty. Thus gradually they will recognise with awe and devotion, what we are only beginning to recognise now, the Meaning of Existence.

8 *The New Outlook in Physics*

It is often said that science is becoming more idealistic than it used to be, and there does seem to be a tendency to unite a study of physics with a study of some of the peculiar phenomena of Life. Let us see how we stand in relation to the Physics of to-day.

In a recent address on "Literary Biography," Mr. Philip Guedalla has jocularly said that "Biography is a thing with perfectly definite limits; it is a region that is bounded on the north by history, on the south by fiction, on the east by obituary notices, and on the west by tedium." We may parody this by saying that the science of physics is bounded on the north by mathematics, on the south by experiment, on the west by accumulated experience of the past, and on the east by intuition and speculation.

The northern region is cold and arid, but exceedingly bracing and stimulating to those who have sufficient clothing to enable them to feel at home in those icy fastnesses, whence descend fertilising streams to the plains below. The southern region is more habitable, and very fertile in all manner of practical contrivances which have modified, complicated, and to some extent ameliorated, the lot of mankind: so that it leads into a region of tropical fruitfulness in which the engineer and the capitalist are more at home than the pure physicist. The western boundary is one towards which our luminaries appear to be continually descending into comparative oblivion, leaving behind their fructifying influence, and becoming themselves more or less superseded and out of date.

It is to the eastern horizon now that all eyes are turned, watching the luminaries that are ascending through the mists of the morning, only dimly seen as yet, but bringing with them a great promise for the future

and hopes of a clearer sky when the clouds have cleared away.

The electron was one of the objects on which our scientific observer feasted his eyes, at the beginning of this century, as a definite speck of brightness. But now it is drawing itself out, and seems more like a comet than a fixed star. Its boundaries have become blurred, and its locality indefinite. From one point of view the definite points of light seem merging into a sort of continuum; while, from another, a continuous luminosity gathers itself together into discontinuous points. The gain of definiteness on the one hand is mingled with a loss of definiteness on the other. A continuum seems breaking up into discontinuities, and yet discontinuities show signs of merging into a continuum. It is impossible to say what the outcome will be, and it would be rash to make the attempt. Suffice it to say that a greater unity is beginning to be discerned throughout the material cosmos; and that the initial stages

of some comprehensive unification are of great interest for the present and of good augury for the future.

Let us now trace these unifying resemblances rather more in detail.

The atom has yielded up some of its secrets; and so have the stars. The two things, so different in scale, are more alike than had been expected, and investigation of the one helps our knowledge of the other. It is probably true that more is known about the interior of a star than about the interior of the earth. Some of the stars are disintegrating into radiation, and so are some of the atoms. Nothing material is permanent, everything is in a state of flux. This indeed was said long ago by Heracleitus as a brilliant intuition, but it is turning out more literally true than could have been anticipated. Old-established laws are modified and half discarded, new laws take their place, and we are surrounded by uncertainty. The conservation of matter has had to be discarded, and there

are signs that even the conservation of energy begins incredibly to be suspect.

Meanwhile, matter and energy have merged into one another; both are treated geometrically, as if they were properties of space, or rather of the greater generalisation called space-time; and there is beginning a great unification which, in spite of present complexity, seems likely to lead to an ultimate simplification. Electricity and magnetism, whatever they may be ultimately resolved into, seem likely for the present to reign supreme. Already they have dominated and annexed the domain of optics and light; they are depended on for cohesion; and now they seem likely to absorb gravitation likewise. Matter already is largely electrical, some think wholly electrical. It has been discovered to be one of the forms which energy may take.

The whole of activity consists in the transmutation of forms of energy; although what energy is in itself remains an open question. Space is discovered to have

physical properties: and just as Faraday recalled our attention from the conductors supporting electric charge to the space surrounding them, and showed that all the observed phenomena really went on in that apparently empty space, so it would appear to be with our wider outlook in the near future. Matter is turning out to be an insignificant portion of the whole physical universe, a rare and occasional perturbation of its vast extent. Probably the more important, although certainly the more elusive, activities occur in the inter-atomic, inter-planetary, and inter-stellar space.*

Hitherto our attention has been concen-

* The stars are not at all close together; the great bulk of space is empty. Only at long intervals do we encounter a star. If we reduce their scale till each star is a speck of dust, Sir James Jeans tells us that on the average those dust particles would be 80 miles apart; and that even in our own fairly crowded region of the galaxy, where the intervals are in yards rather than miles, a space like Waterloo Station emptied of *everything except six or seven grains of* dust will represent the abundant room allotted to the sun and its nearest stellar neighbours.

trated and almost entirely limited by our senses to the particles and aggregates of matter. But now our minds are ascending beyond the scope of sensation into the fundamental region in which matter exists. All the heavenly bodies move in a vacuum; and so does every atom. It is in the interspace that the energy really lies. Something in space it is which welds particles together by cohesion into a tangible body, and welds bodies together by gravitation into a cosmos; so that the properties of that interstitial space are likely to form the greater part of the physics of the future.

We know something about empty space already; we know that it can transmit radiation, and we know the rate at which radiation travels. There seems no doubt about that, although the intimate or ultimate nature of radiation we do not yet know. We realise that it is a modification of space, and we can follow the modification in time. But what unmodified space is like, and what time is like, we do not know. We can,

however, experiment on radiation by aid of its interaction with matter.

Another modification of vacuous space we call an electric charge, and we can make experiments on that too. Surprisingly it has inertia, and is amenable to mechanical force. It almost certainly has weight. Another variety of obscure energy we call a magnetic field. These are all modifications of space; and probably the very ingredients of the atom of matter are modifications too, for the atom is composed of positive and negative electric charges, far apart from each other in proportion to their size. Herein enters the possibility of experiment. We can apprehend and deal with matter; for it is an immediate inference from our tactile sensations, and we are provided with muscles which enable us to move it—to move it in accordance with plan. We might define matter as that which can be moved; although what "motion" really means we should find it difficult to explain. Matter and motion are

things we have senses for, so that we have grown accustomed to them, and are apt to forget their mysterious nature. The problem of modern physics is to try to understand these over-familiar things and to resolve them into something more ultimate, although at the moment less intelligible. Not unnaturally our early attempts at formulation involve unfamiliar and even contradictory modes of expression.

Whenever we encounter or seem to encounter an insoluble discrepancy between reality and reason, or rather between what we apprehend as reality and our particular brand of reasoning, we may assume that not the Universe but either our apprehension or our reasoning is at fault. It is an act of faith so to assume; but it is a faith that has been justified in particular instances time and again. The uniformity of nature, the sequence of cause and effect, rests on no surer foundation. Such faith is essential to the pursuit of science; and I presume that faith of that kind is acceptable to theo-

logians. In that faith we shall be wise if we continue, whatever else we may feel constrained to discard. If we could solve all our difficulties while we tramp along, existence would be duller and less stimulating than it is.

Other things interact with matter besides light and gravitation, and thus also have come within our sensory ken. "Life" interacts with matter; so that we are accustomed to observe living things, both animal and vegetable. But what life really is, and how it interacts with matter, we do not know. A department called bio-physics is growing up, which seeks to investigate the interaction of life and matter. Perhaps life is a modification of space too?

Animated matter obeys the laws of physics and chemistry, just as ordinary matter does: yes, we may grant that to be true; and yet, when animated, it has something super-added. It has properties not possessed by the inanimate,—a kind of spontaneity, a sort of self-determination. Or at the least

it is formed into a characteristic shape not dependent on the kind of food supplied. And when in its higher stages life blossoms into consciousness—our own consciousness—we have first-hand knowledge that it is able to form strange conceptions; it has not only memory of the past, but anticipation of the future also; it can determine and can act accordingly. No mechanism can do that, so we are more than mechanism. We can form plans and carry them out. We can brood and meditate and partly understand. Occasionally we can even predict. We are guided by the future as well as by the past.

If, indeed, life is a manifestation of one of the properties of space-time, it is one of extraordinary interest, for it suggests scope for investigation far beyond anything previously contemplated by science. Mind—whatever it be—leads us into a region of the infinite and the incomprehensible. It seeks to understand. And where it fails to understand it can admire. It can admire

the beauty of structure and processes; it can marvel at the adaptation and splendour of nature, the interlocked intricacies of its laws. And when these too pass beyond its scope, so that they are no longer apprehensible but merge into the unfamiliar and the eternal, it is overwhelmed by a feeling of awe, and takes refuge in the human faculty of worship.

A somewhat modified view of mechanism still holds the field; but it is *mechanism* of a glorified kind. No longer do we expect to explain all even purely physical realities in terms of matter. The old mechanical models of ether will not work. Now that we realise what a comparatively exceptional peculiarity matter is, and how dependent it is on the properties of the medium in which it exists and out of which it is presumably formed, it is in no way surprising that the aim now is rather to explain the behaviour of matter in terms of a more fundamental reality, than to seek to model reality under the guise of a material assemblage. Even

the physical universe is far greater than the limited material aspect which appeals to the senses. The true nature of physical phenomena is to be sought in space and its properties. The attempt to find a mechanical ether, and to define it in terms of material machinery, has been perforce given up. Yet the name "ether" may survive, for there is certainly a physical reality filling space. Can it be a substance? It is substantial in that it stands under everything—a truly fundamental sub-stance, although unlike any substance with which we are acquainted.

Herein lies the immediate problem of the future. This may be regarded as the next extensive step or aim in physics—to weld together the newer and the older discoveries into an all-embracing system which shall include them all—although probably it may do so in ways which at present we can barely guess. To make revolutionary progress we must transcend matter and its relative motions, and must formulate the

properties of the fundamental entity which fills space and endures in time. There must be something in it of a periodic character which justifies our sense of duration, and accounts for all the properties of matter. The mind is stretched to the utmost, but we do not despair. Rational the universe has always been, and rational it assuredly is. In other words, it is in harmony with the human mind, when that is sufficiently informed and enlightened to perceive the grandeur of truth.

Experience has consistently shown that there is a rational process behind everything, and it is possible for us by patient investigation to ascertain the working of the process and to study the laws of its operation. Theologians would surely admit that nothing is accomplished save by rational methods; nor is there any intervention by other than accredited agencies or agents—however transcendent some of them may be. As was said of old about the Logos—the Personification of Reason, of Law and

Order—"Without him was not anything made that was made."

It is the privilege of science to contemplate creation and to work it out; to realise what is happening and to dive down as far as we can to the innermost core of the mystery. We have, indeed, far to go: we have as yet but scratched the surface of things. Only lately have we begun to probe the constitution of the atom; only recently have the stars and nebulæ begun to display their hereditary connection. The birth and death of worlds is now being contemplated by science. We are witnessing something of the process of creation actually going on.

Humanity is in its infancy. What wonder if we stumble and halt by the way. Yet we are making progress. We that were walking in darkness have caught a glimpse of a great light. Naturally we are dazzled, and it may be perturbed. But we live in a privileged age. Men of genius as great as any in the past are working among us. Some great generalisation is approaching;

and mathematical physicists all over the world are contributing to its arrival. The work may have to go on for a century before the sun rises, but through the haze and mists of the twilight we catch the glimmer of a rosy and hopeful dawn.

9 *A Survey of Obscure Psychic Phenomena needing Investigation*

MEANWHILE, quite apart from Biology, assertions are made about a number of obscure faculties possessed by human beings which need investigation, since abnormal and exceptional occurrences often tend to illuminate the customary and the normal. I propose to summarise the kind of phenomena which are receiving and which need investigation; though this chapter is one that may be skipped by students of the subject already familiar with its literature.

The primary question is one of fact. If there is no fact underlying the subject the whole question falls into a mere discussion as to how such beliefs arose—a question on which folklorists would have plenty to say satisfactory to themselves. The question for us is, What are the facts?

The asserted facts are such as these:

I. Unconscious reception of information in dreams, whether of past, present, or future events.

Dream-activity sometimes results in:

(*a*) Solution of problems, or construction of poems.

(*b*) The devising of plots for stories and other intuitions.

(*c*) The reproduction or perception of something occurring at a distance.

(*d*) The anticipation or premonition of something likely to occur.

It is fairly well known that R. L. Stevenson used to get some of his plots contributed to him either in his sleep or in some dreamy waking condition. He has described his feeling of the process; and, among other things, it is understood that the Jekyll and Hyde plot came in that way.

Other writers, especially poets, have attributed their best work to some kind of intuition or inspiration, appearing to come from outside themselves; the most notable instance perhaps being Coleridge's *Kubla Khan*.

Unconscious mental action in other fields can be illustrated by the case of Lord Kelvin, who used to take one of his abstruse mathematical notebooks to bed and read it last thing, hoping, and sometimes finding, that the difficulties would be lightened by morning. Indeed, this sort of procedure is sometimes followed by schoolboys as a help to learning their lessons—or used to be when extensive learning by heart was in fashion.

Actual information obtained in dreams is rarer, but there are a great many legends of it, some of which appear well-evidenced; and a few recorded dreams seem to anticipate the future.

Dream-activity is sometimes accompanied by unconscious bodily movements such as speaking, writing, or walking. If the subject matter of the dream rises into consciousness at all, it usually evaporates quickly and is readily forgotten. Occasionally, however, a dream makes a deep impression and gets itself permanently recorded. Only in

board, where printed letters are already provided and are merely pointed to by some object on which the hand of the automatist rests. Another variety is when letters of the alphabet are called over, and the right set selected by table tilts. Occasionally a Morse alphabet is used, by a process analogous to the use of a telegraphic key. The particular instrument does not matter: any piece of wood serves.

These waking activities are usually semi-conscious, and soon forgotten unless a record is preserved. The things obtained are of very different value. Much of it represents merely the subconscious or dream stratum emerging into activity without sleep, and yet giving nothing better than a sort of dream. But occasionally the subconsciousness appears to be in touch with another order of existence, and thereby gains information that otherwise would be inaccessible, so that the process may be regarded as the lowest type of inspiration. For in true inspiration, though ideas also well up

through the subconsciousness from an unknown source, they are received into the consciousness and can there be utilised and elaborated into a work of art or literature or music. Inspiration which hardly rises above the subconsciousness and is received automatically, may be of value, but must be considered as a lower type.

A curious lucidity or perceptive faculty can be stimulated by objects, or even sealed documents, when it is called psychometry; or, when the object is buried, dowsing. Another variety is stimulated by staring at a bright object, or into a clear depth, when it is called crystal-vision. These curious faculties have been treated as superstitions, but whatever their explanation they have established themselves as facts. Water-finding by experts has indeed become almost a commercial proposition. Some people seem born with this faculty, and they usually employ some sort of twig as indicator; though it is difficult to see how the twig helps them, or what causes it to move in

their hands involuntarily. Presumably the finding of water was of such vital importance to animals and to primitive man that some trace of an instinct has survived.

The subject of crystal-vision greatly interested Andrew Lang, who studied it a good deal, and considered it a reality; that is to say, he considered that the state of mind brought about by looking into a clear depth, for some time, facilitated the rise of pictures or images in the mind, and that these pictures or images sometimes corresponded to either historical or current events. So far as I know he did not suppose that the crystal or glass sphere had any influence other than a stimulating one; he did not imagine that the pictures were really "there".

It is, however, sometimes asserted by responsible people that these pictures can occasionally be seen simultaneously by others; which might perhaps be attributable to the influence of telepathy from the original scrier. It has even been said—I

know not on what authority—that occasionally these visions can be photographed, which would point to objectivity. But I by no means vouch for that; since, before assuming anything of that kind, great precautions would have to be taken against the surreptitious placing of pictures below the transparent body. Of course that precaution must be taken anyhow; but when figures in the vision are seen to move about and act dramatically, it renders that sort of normal explanation unlikely. A photographic record would not have that advantage.

Instances of the use of the so-called psychometric faculty are too numerous to mention. Whatever may be the explanation, it is certain that an object with a history attached to it does seem to enable a sensitive person to decipher some of that history. Robert Browning narrated an episode of that kind in connexion with a ring which had belonged to a murdered man. And many other instances, some of them observed by myself, have been published.

Results presumably attained in this way have attracted a good deal of attention lately, under the name of Book Tests, whereby passages in a closed book, even in a distant library, together with the page on which they occur, have been more or less clearly read or indicated.

An apparently important case of this faculty was described by Professor Richet and Dr. Geley as having taken place at Warsaw a few years ago, the psychometrist being a certain engineer named Ossowiecki. He is described as having the faculty of very clearly reading letters enclosed in sealed envelopes, these letters having been sometimes written by people at a distance, and nobody present knowing the contents. The personality of the writer, and the circumstances in which they were written, were also described by M. Ossowiecki. In one instance, a paper containing a drawing and inscription was soldered up in a lead tube which ultimately had to be cut open in order that the experimenters might verify

the contents. They were found to be exactly what was described by M. Ossowiecki (*Revue Métapsychique*, Nov.–Dec., 1921).

The comparatively well-known faculty of dowsing, or finding objects hidden in the ground, has been specially studied by Sir William Barrett, who has written an elaborate book on the subject, and has framed theories; though a full and satisfactory explanation of the faculty is still lacking.

Trance Lucidity

III. Trance. Deeper receptivity can be manifested in the trance state, and is demonstrated by automatic or quite unconscious movements, resulting in either trance-speech or trance-writing. The utilisation of this kind of lucidity requires a note-taker or an experimenter in charge, either to record the trance-speech, or to see that pencils and paper are properly available.

A classical example of this kind of thing is the case of Mrs. Piper, with whom the S.P.R. had twenty-five years' experience.

It is also a fairly common form among the best professional mediums to-day. The element of sophistication, from the knowledge or mental deposit of the medium, is here reduced to a minimum, at least when the trance is strong and the conditions good; that is, quiet, peaceful, and unperturbed. But even so the brain of the medium has to be employed; the limitations of its capacity are therefore apparent; its habits or usual channels, or brain deposits, have to be utilised or selected from; and only by special effort can intelligence be got through of a kind quite beyond the medium's normal brain capacity.

An educated medium, therefore, furnishes a better channel for, let us say, foreign languages, or scientific facts, or mathematical calculations. But although an educated medium can give higher results, there is always the difficulty of being sure whether the normal powers of the medium are not sufficient to account for those results. And this difficulty is almost greater with an

educated medium than with an average person with no education worth speaking of.

At the same time it is only fair to record that occasionally things are got through from what appear to be distinguished scholars on the other side, which are beyond the capacity of even an educated medium; the most striking instance of which is the problem apparently set by Professors Verrall and Butcher, published by Mr. Gerald Balfour, under the title "The Ear of Dionysius."

It would take too long to refer to this paper in detail, but briefly it may be said that the problem set was to find an obscure classical author whose writings would unite "The One Ear of Dionysius" with "The One Eye of the Cyclops" in unmistakable fashion, and at the same time would bring in other themes, such as Music and Jealousy, and Acis and Galatea, and Balaustion, and Horace, and Satire—and incidentally several other things. Clues or hints towards solution were not all given at once by the

hypothetical propounders of the problem, but at intervals, so as to leave a chance for the problem to be solved by us; but it was not solved until the authors of it gave a final clue. The solution turned out to be Philoxenus, a dithyrambic poet whose writings are extinct except two lines, but of whom something is known through other writers such as Athenæus. The name Philoxenus, once given, was seen to furnish a complete solution, uniting all the themes mentioned, in a way explained in Mr. Balfour's paper. But Philoxenus is an author of whom few classical scholars remember to have heard, though he is one that might very well have come under the notice of Dr. Verrall when alive, and, as the script indicated, his name is just mentioned in Book II of Aristotle's *Poetics*.

It is absurd to suppose that any of this elaborate and detailed classical knowledge can be attributed to the lady of ordinary education through whom the scripts were received.

Again there was another case of interest in connexion with a question about Lethe, which was put to the supposed Myers through the mediumship of Mrs. Piper, whose classical knowledge is nil. The answer given to this question was not of the simple and obvious kind, but was an elaborate reference to a story in Ovid, which at first sight appeared to have nothing to do with the River of Lethe; though, on examination, it was found to be quite appropriate.

Many other things connected with this Lethe subject are narrated in the *Proceedings* of the S.P.R. And a cross-correspondence, on this same subject, with another medium not connected with Mrs. Piper is also there recorded by myself; the references, this time, being to the Sixth Book of the *Æneid*; and the name of the man who had asked the same question previously, in America, was also given supernormally. (Proc. S.P.R. vol. xxv. p. xi. 126).

Cross-correspondence

This whole subject of cross-correspondence is of interest and importance. It was discovered by finding hidden references to the same subject coming through two or three different and disconnected mediums (one in England, another in America, and another in India), the references all being made independently and approximately simultaneously, presumably for the purpose of showing that one intelligence was at work in concocting the fragmentary but ultimately coherent message. The intention of the communicator, clearly, was to get something definite through several different channels, calling attention ultimately to the fact that it had been got through, but wrapping it up at the time so that none of the mediums should understand what was being written, so as to avoid unconscious telepathy between them.

This ingenious plan has been carried out very successfully; and several volumes of

the *Proceedings* of the S.P.R., subsequent to Mr. Myers's death in 1901, are full of this kind of almost incontrovertible evidence.

Discussion and Provisional Attempts at Explanation of such Phenomena

Reverting to lucidity in general, however it be manifested, and apart from any specific form, the proof has occasionally been fairly conclusive that the results obtained were certainly beyond the power of the medium, especially when that medium is a young child—of which I suppose the infant Samuel is the ancient classical case. It is noteworthy that child-lucidity is still known in various forms of infant prodigy, especially in music and the easier kinds of mathematics. In some cases it has even been asserted that the brain and muscle mechanism, even of an animal, has been used to do exceedingly simple arithmetical or spelling operations.

As regards supernormal animal intelligence, M. Maeterlinck has called public

attention to the case of the Elberfeld horses, and the Bavarian dog Rolf, and has shown how difficult any normal explanation is. An investigator of the S.P.R. also saw something of these animals, and he could detect no fraud on the part of those who attended to them.

Child prodigies seem less bizarre, but are really equally mysterious. The calculating faculty and the musical faculty both seem to develop at a preternaturally early age in exceptional cases. One of the most remarkable was the Spanish child Pepito, who at the age of two could play the piano, and at the age of three gave public performances; not, of course, reading the music, but being able to play anything he had heard, and also occasionally to compose.

I do not say that this precocious faculty always lasts in later life, though occasionally we know that a fairly precocious child has developed into a great musician, like Handel or Mozart; or into a great mathematician like Gauss. Though in other

cases the faculty has either evaporated altogether, or has survived to some extent in a fairly ordinary individual; or sometimes, strange to say, in an individual below the normal intelligence. All these questions are interesting enough, but the important thing for our present purpose is, how the faculty can exist at all in a very young and untrained child.

Possible Sources of Lucidity

The sources of lucidity in all these cases (I, II, III) must be sought. And most of the controversy, at least the more reasonable kind of controversy connected with this subject, concerns the nature of the intelligence concerned. Admittedly the intelligence shown is not the normal customary intelligence of the operating person, whether they be in the dream stage, or the waking state, or in trance. At least, whenever the things said can by any stretching be attributed to the normal intelligence no serious problem arises; but as to the nature of the

ultra-normal intelligence in more difficult cases, there are several schools of thought.

One explanation has been sought in a stimulated activity of the subconsciousness or subliminal self of the medium. All may agree that it operates through that stratum, but all do not agree that it originates there. That, however, is the view of some, though it is a view deficient in clarity. Some have tried to attribute the extra lucidity and special acquisition of knowledge to unconscious cerebration. But how a sleeping brain can perform difficult operations, or evolve knowledge, demands more explanation than can ever be forthcoming. "Consciousness" is a psychological term, not an anatomical or physiological one.

Another view is that it is due to telepathy from other living minds, and that the medium is merely receptive of this telepathic impact; that in fact the percipient has the faculty of tapping the minds even of people at a distance, and thereby gaining access to their information. The discovery

of experimental telepathy makes this a *vera causa* not to be lightly passed over. But there are difficulties about it, and one is the anticipation of the future; which, indeed, is difficult on any hypothesis. Another is the extraordinary distance which would have to be admitted for action of the supposed telepathic agent, for instance, in a distant country or even at the Antipodes. This seems fatal to the invention of any such imaginary and purely hypothetical entities as "brain waves." On the whole it appears likely that telepathy is a psychical, not a physical process.

Other Possible Agencies

Another school of thought holds that an explanation must be sought in telepathy from the departed—a willing communication of their thoughts to the subliminal of the medium—so that messages from them may emerge and be comforting to surviving friends and relatives, as a sign that the departed friend is still active and helpful

and by no means extinct. How the departed can anticipate the future is not clear, but it is assumed that they are in touch with some wider knowledge and deeper insight than our own, so that things sealed to us may be open to them.

We know that anticipation of the future is to a certain extent possible, and, indeed, possible to a very considerable extent so far as inorganic nature is concerned. We all anticipate that the sun will rise to-morrow, and astronomers can predict a few years, or even a few centuries, ahead. Moreover, of late there has been a certain amount of success in predicting even the weather, though for not more than a few days.

Tides also can be predicted with accuracy; indeed there is a tide-predicting machine devised by Lord Kelvin and others. All these predictions are subject to a certain amount of contingency; that is to say, the prediction assumes that no catastrophe will occur, or that no fresh cause will intervene which might upset them. No prediction

is absolutely infallible. Something might conceivably interfere with the rising of the sun, though it is difficult to imagine what.

Our powers of anticipation are not limited to inorganic nature. Subject to a certain amount of uncertainty, it is possible to predict what an animal will do under given conditions; and the same power exists about the actions of reasonable and responsible human beings. When a railway time-table predicts that a train will start at a certain time, it assumes that the engine driver will not go on strike. If it were not for some dependence on character it would be impossible to make plans for the future, as we all do. And although a statesman may find it difficult to predict what other politicians and foreign nations will do, yet, in so far as they possess stability of character, it only requires a wide knowledge of the circumstances to be able to infer with moderate correctness how they are likely to act.

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Tides also can be predicted with accuracy; indeed there is a tide-predicting machine devised by Lord Kelvin and others. All these predictions are subject to a certain amount of contingency; that is to say, the prediction assumes that no catastrophe will occur, or that no fresh cause will intervene which might upset them. No prediction

is absolutely infallible. Something might conceivably interfere with the rising of the sun, though it is difficult to imagine what.

Our powers of anticipation are not limited to inorganic nature. Subject to a certain amount of uncertainty, it is possible to predict what an animal will do under given conditions; and the same power exists about the actions of reasonable and responsible human beings. When a railway time-table predicts that a train will start at a certain time, it assumes that the engine driver will not go on strike. If it were not for some dependence on character it would be impossible to make plans for the future, as we all do. And although a statesman may find it difficult to predict what other politicians and foreign nations will do, yet, in so far as they possess stability of character, it only requires a wide knowledge of the circumstances to be able to infer with moderate correctness how they are likely to act.

Hence, although the element of contin-

gency is greater, and the margin of uncertainty wider, in dealing with creatures possessing free will, yet some sort of foreknowledge is possible, without the slightest admixture of coercion or predestination. And if *we* are able to predict a few weeks ahead, or even a few minutes, it is only a question of degree whether a Higher Being, with wider knowledge and greater insight, shall not be able to predict with fair correctness for years or even centuries. There is therefore nothing inconceivable in anticipation of the future, though it is true there are some puzzling circumstances connected with it, even if we assume that the subliminal of the medium is occasionally in touch with Higher Powers.

Control

A modification of the telepathic explanation is to assume the possibility of actual or telergical control—that is to say, that some part of the medium's organism is actuated and moved by a controlling intelli-

gence not his own; that his physiological mechanism is utilised for the purpose, while he himself is either wholly or partially unconscious. In other words, that the controlling intelligence, not having a mechanism of its own, utilises such mechanism as is available, during the temporary absence or by permission of its owner.

Those who hold this view of the existence of a real "control" think it probable that the controlling intelligence may be one of several different kinds of entity. It may sometimes belong to a departed relative; but it may also belong to some perhaps incompletely developed individual, who is permitted in this way to be of service, and who devotes his energy to this occupation until he has acquired considerable facility. It is through such a comparatively lowly but experienced and painstaking "control" that many of the messages from the departed are found to come, since they themselves seldom have the skill to operate an alien mechanism.

The best known of such controls are Mrs. Piper's old control, Phinuit, and Mrs. Leonard's control, Feda. They are sometimes called "secondary personalities," but that phrase is no explanation. What they really are I am not sure. But I see no reason compelling us to deny that they are what they claim to be—real though perhaps partially developed personalities independent of the medium, able to use her organism, at given times and under proper conditions, with a facility acquired by long practice.

Possession

But this possibility of control opens the way to what is more specifically known as possession—that is, control by an intelligence not of a helpful kind at all, but harmful and perhaps seriously evil. The Biblical cases of this are well known; and if possession is a fact it may account for some cases of madness, which may be amenable to some kind of exorcism as in the old days. The existence of this kind of evil control is one

of the dangers which attend the subject; and vicarious or mediumistic activity should not be entered upon lightly, nor without a prayerful determination to guard it rigidly and to use it only for serious kinds of service.

Psycho-Physical Phenomena

Besides the intelligent kind of mediumistic activity hitherto spoken of, there is a whole class of what are called Physical Phenomena, some of them of a very extraordinary kind, which suggest a tapping of the resources of powers and intelligences outside ordinary humanity. The powers responsible for the physical phenomena of spiritualism do not appear to be specially good or specially bad, nor do they always appear to be specially human. It seems unlikely that only human intelligences should exist. But then it may also seem unlikely that, if others exist, we should ever get into touch with them or be aware of their existence. But that is just a question

of fact. The facts seem to indicate that we do, through the agency of certain individuals (who, by the way, seem rather pitiable than otherwise), get into touch with agencies which are able to perform things beyond present human powers, even though they may be things of trivial or insignificant importance.

The simplest phenomenon of this kind is what are called raps, percussive noises produced without apparently adequate cause. Next come movements of untouched objects, the tilts of an untouched table and actual levitation or rising from the ground. These various movements show intelligence of a kind, not of a high kind, but they are able to respond to simple questions and obey orders, such as to keep a thing supported for several seconds and then drop it, or to lift up one end rather than another, and so on. The intelligent part of the phenomenon, however, is overshadowed by the physical strangeness, which seems miraculous simply because we have not got the clue.

There have been many physical mediums, of whom Home—investigated closely by Lord Dunraven and by Sir William Crookes—seems to have been the most powerful. Some of them unfortunately have been tempted to eke out their failing powers by normal methods of producing phenomena, in a way which under the circumstances must be stigmatised as fraudulent; though it is permissible to think that in some cases the normal control is in abeyance and the deception partly unconscious. The case of Eusapia Palladino is an instance of that kind.

Recently, at Munich, Dr. Von Schrenk Notzing discovered a boy, Willy S., who has an undoubted power of moving objects without contact, and of producing levitation of objects completely screened from him, and while he himself was thoroughly held by experienced investigators.

However these phenomena may hereafter be accounted for, their occurrence is indubitable; by which term it is meant that

it can only be doubted by those who have not had the necessary experience. By them, of course, it can be doubted very thoroughly, and the doubt is in no way surprising. That legitimate doubt should result in wholesale ignorant denial, however, is not so creditable.

These things only take place in the presence of a certain kind or type of person, who still is usually called a medium, though the mediumship is of a different and rather unusual and presumably lower class. Continental physiological observers have detected a kind of material emanation from such persons, which they call Ectoplasm, or Teleplasm, or Bioplasm. This is extruded from the medium, and seems to be directly responsible for the observed supernormal movements of objects. It is naturally supposed that these movements do not occur beyond the reach of the ectoplasm, though they often occur beyond the normal reach of the medium.

Not only movements, however, but lights and scents and sounds are also, on good

authority, said to be produced. Scents as of flowers in a room where there are none. Lights floating about in a completely dark room.

Stranger still, voices (what are called Direct Voices), sometimes quite loud, are heard in the air, sounding as if they originated at a considerable distance from the medium's larynx. Direct writing is also one of the phenomena asserted—that is to say, writing on a slate or on paper by a pencil which is not normally touched. And further, the luminous appearances sometimes cease to be merely vague or misty, and take the form of some part of a human organism, looking like a hand or a face. And it is asserted that these appearances can be photographed, showing that they have some kind of objective reality.

Temporary Materialisations

Occasionally the process goes farther still, and a materialised phantasm—that is to say, a portion of an apparently complete human

being—is seen and can be felt; this phenomenon is known as Materialisation, and is perhaps the most extraordinary and incredible of all the asserted phenomena.

Of the many asserted phenomena connected with Materialisation, say, of hands and faces, some recent investigations by Dr. Geley and Professor Richet in Warsaw are very striking. The hands, when they appear in the dim light, are asked to dip themselves into a bowl of melted paraffin wax and then withdraw themselves; which leaves a crust or glove of solid paraffin upon the hand. The hand is then asked to dematerialise, leaving the glove empty. The abandoned coating or glove is very fragile, but it can be filled with plaster of Paris, and in that way a solid cast taken of the markings on the hand.

The casts thus obtained—many of which are now at the Institut Métapsychique in Paris—are of different sizes and character. Some have the fingers flexed; some have two hands clasped together. The wrinkles

of the skin are quite visible, and the hands do not correspond with those of the medium in size or in any other particular. Moreover, in some instances, it has to be admitted that no normal hand could withdraw itself from the paraffin glove without tearing it. Hence, in the opinion of many skilled persons who have examined these objects, they are themselves evidence of something supernormal.

For a description of the various precautions taken and tests made, and for illustrations of the phenomena obtained, the reader must refer to various numbers of the *Revue Métapsychique*, from May and June, 1921, onwards.

Another variety of the same phenomenon is the obtaining of apparently identifying thumb-prints by getting an ectoplasmic formation to impress itself on warm dental wax or other plastic material. Such reptesentations have been published in a Journal of the American S.P.R. and have been vouched for in *Nature*, Vol. 122, p. 246,

by the well-known biologist and entomologist, Professor R. J. Tillyard, F.R.S.

In these physical phenomena—Direct Voice, Direct Writing, and, still more, actual Materialisation—we seem to be in the region of the incredible. But it is beyond our power to make up our minds beforehand what is possible and what is impossible. We have to be guided by the facts; and if the facts seem incredible—as they do—we have first of all to assure ourselves that they are facts, and then conclude that there is a department of knowledge to which we have as yet not got the key.

The key is being sought for; and when we find it we may be thoroughly convinced, by past experience of scientific phenomena generally, that all these things have a law and order of their own, and only need a more complete understanding to fall into the system of organised scientific knowledge. Till then they remain outside; and some scientific men think that the easiest plan is to deny them wholesale. But that

is not a truly scientific attitude, and does not conduce to the widening of our knowledge or the broadening of our outlook.

Moreover, so far as religious people are concerned—and they are perhaps among those most tempted to deny—it may be a comfort to them to realise that many phenomena are akin to those which have been narrated as occurring long ago, and have a certain amount of Biblical authority, showing that they were believed to occur in ancient times. Similar occurrences are said to be believed in by savage races all over the world—a fact which does not really militate against their truth, though it may be used to excite prejudice—it only shows that what occurs now has been always more or less liable to occur. For real proof, however, we can only appeal to the present.

Phantasms

The appearance of phantasms—that is to say, a sort of hallucinatory figure conveying tidings, it may be of death or disaster—is

fairly common, and most families have something of that kind in their records. The evidence for veridical phantasms, agreeing more or less closely with the instant of death, is very extensive; it has been carefully and conscientiously sifted, and by students of the subject the fact is regarded as proven.

But concerning the explanation of those phantasms people may differ. Indeed it is possible for the phantasms themselves to differ in kind. Some may be due to a mere telepathic impression, nothing physical being really there. Another may be due to personification by some intelligence, able, as it were, to construct a likeness, as in Ovid's *Metamorphoses* (Book XI, where Morpheus is supposed to construct a vision of Ceyx for the sad information of the bereaved Alcyone). While another class may be conceivably a real objective materialisation of the person represented.

The controversy usually turns upon whether the appearance is subjective or

objective, mental or physical. But it must be admitted that to discriminate between subjective and objective is not always easy. For instance, when you look at the image in a looking-glass, is that image objective or subjective? It is objective in the sense that everybody in the right position can see it. It is subjective in the sense that there is nothing really there, nothing that can be felt or handled. The looking-glass is opaque, no light pierces it, and yet the image appears to be behind the glass. It is the *sign* of something really existing, but that something is not existing where it appears. I am inclined to think that this is so with some phantasms. They may have a meaning and correspond to some reality, but they are not really *there*.

Another example of a thing which it is difficult to say is subjective or objective (though less familiar than the image in a looking-glass) is a rainbow. The rainbow appears to be on the clouds, and different people think they see the same rainbow, and

that therefore it must be objective. As a matter of fact they do not see the same rainbow. The actual rainbow is on the retina of each person's eye, and it has no other objective existence. But—I hasten to say —that makes no difference to its poetic treatment and æsthetic appreciation; a physical explanation of beautiful appearances surely still leaves them fully open to mental and imaginative interpretation.

Unreality in the physical sense may be reasonably postulated for many phantasms. Photography is no test of objectivity in the material sense. The image in a mirror can be photographed, so can a rainbow. All that a photograph shows is that there is some physical cause for the impression; that it is not mere illusion or hallucination. The interpretation and moral bearing of any extraordinary incident rests with ourselves.

Interpretation

And so it is with many parts of this great subject. People shy at the phenomena, but

the phenomena are the one certain thing about it. The real question turns upon the interpretation, and that is not a point on which anybody should be dogmatic. There is room for difference of opinion, in the present state of our knowledge. It is possible to treat the subject in several alternative ways. It may be made repellent, or humorous or serious. It is possible to discuss it as a question of fact, or of conduct, or of philosophy. One person may say it is all untrue, illusory and superstitious. Another may say it is dangerous, forbidden and diabolical. Another may hold that it is useless, making appeal mainly to the unbalanced and semi-insane.

It is likewise possible to regard it with over-enthusiasm as the highest revelation vouchsafed to humanity, superseding all recognised religious systems and constituting a new hope for the world.

Lastly, it is possible to regard the subject as a continuation or resuscitation of very ancient doctrines and practices, capable of

both use and abuse. The phenomena recall attention to facts hitherto eschewed by science, some of them apparently rather repellent, some of them encouraging and helpful, but all of them requiring to be studied carefully, critically, and conscientiously. In this way we hope to discriminate between fact and falsehood, to eliminate deception both conscious and unconscious, to suppress exaggeration, and to record things accurately and completely, so as gradually to open up a region hitherto closed to orthodox science, and ultimately to ascertain what bearing, if any, the facts may have upon the conduct, the feelings, the longings, the hopes, of humanity.

The facts are not new. They are to be found in all countries and in all ages. They have been mingled with superstition and priestcraft. They were incipiently known to the ancients, who utilised mediums as oracles, and consulted a soothsayer in all emergencies. Their utilisation is for us sufficiently recorded in the Hebrew legends;

indeed the lives of David and Saul are full of the use of mediums.

There were of course forbidden enchantments, which is not surprising considering the state of the nations round about (for instance, 2 Kings xvii. 17); but so long as the right prophets or mediums were utilised, the practice was approved and employed either in warning or in blessing.

Practical Deductions

It is not unnatural to ask whether the views of students of these subjects have received any enlightenment through their studies; and whether they are able to formulate any provisional conclusions or working hypotheses concerning existence, on the strength of them; either by long study of the phenomena or through communicated information.

Speaking for myself, I cannot say that I confidently trust the validity of communications which I am unable to test. I try to treat them for what they may be worth, as

unverifiable matter, and I have a feeling that we possess an instinct which tells us more or less clearly when we are on the right path. No doubt a consensus of agreement among communications through a variety of channels contributes to a feeling of a considerable amount of probable truth in them; but just as people in different circumstances in this world would give different accounts of life here—a stock-broker would differ from a missionary, for instance, a hunting man from an artist, an esquimau from a hottentot, a publican from a Cabinet Minister—so it may be with people on the other side.

At the same time, when the communicator is a person we have known, we receive his messages with a certain amount of respect, though we always have to allow for possible or probable sophistication by the channel through which they come. A landscape seen through coloured or imperfect glass may be changed and distorted, and yet it is something like reality.

My Own Outlook

So if I am asked what is the present outcome of psychical science in my own mind, I should say:

In the first place, that the accessible portion of the universe is turning out larger than we knew, and that a whole realm of hitherto obscure fact is coming within our ken: a region which our customary scientific investigations hitherto have not explored, and which few of the eminent investigators in orthodox regions have even suspected.

Next, that we are thus introduced to a region of what might be called supramundane activity and intelligence. We discover by signs and tokens a group of intelligences interested in the earth, and probably near it—if to them space has any meaning—but existing apart from familiar association with that Matter which so directly and continually and exclusively appeals to our animal-derived sense-organs.

Some of these supramundane intelligences

are able occasionally to influence our minds, though never to trespass on our free will. They are for the most part unable to exert mechanical force on material objects, for lack of an animal-descended muscular organism; though exceptionally, through a borrowed organism, they may sometimes bring about minor but astonishing physical results.

So I hold that these two worlds—which I incline tentatively, but definitely and not figuratively, to call the material and etherial—interlock and interact to such an extent that to higher vision the worlds probably appear not two but one, although they are different enough to affect us here and now, one constantly, the other usually not at all. All that we ordinarily know of the world, everything which is so conspicuously apparent to us at present, while encased in this material body and endowed with only our five or six senses, turns out to be but one aspect of the whole.

Furthermore, I believe that under certain only partially understood conditions, inter-

course or intercommunion between the two world-aspects, or states of being, is possible —indeed, that it has already begun; so that not only are the Highest Powers accessible to our sorrows and hopes and petitions—as in the eye of religion, though not in the eye of science, they always have been—but so that some of the minor personalities, those whom we have known and loved, are occasionally accessible to us also, and are able to show signs of their abiding interest and affection. There are doubtless many kinds of communion—some higher, some lower—the highest being presumably that which is called the Communion of Saints.

Short of that, however, when any of these discarnate intelligences get into realised communication or conversation with us, through a mediumistic channel, they tell us many things; they tell us that both we and they are permitted to be subordinate agents of the Almighty; that they are not necessarily greatly superior in grade to ourselves; and that they are conscious of other beings of

all grades from low to very high. All these are said to be existent in the Universe as well as ourselves.

So we are privileged to find, first, that we too are immortal spirits, at present in process of training amid difficult surroundings; and, next, that we are not alone in the universe, although apparently completely isolated in flesh; that the infinite intellectual and moral chasm which separates us from Deity is not, so to speak, empty, and that we are surrounded by those whom we are entitled to call friends. These last seem to constitute a group, growing and developing as we are, not far removed from us in effective space, and not very far beyond us in knowledge. They claim to have feelings not wholly unlike our own, and to be capable in minor degrees of foreseeing, planning, and guiding, and ready to help everything lower than themselves. They show a keen appreciation of their privileges, and though still possessed of free will are always willingly subject to Divine control.

The concurrent existence of hostile or evil influences is not denied, and has to be strenuously guarded against by us, especially when we open our minds to supramundane power; but the powers of good are stronger, and can curb or overpower the evil, unless something in ourselves is traitorous.

Thus, then, looking at existence as a whole, I have begun to recognise, amid the multifarious possibilities of existence—some of them too lofty for our ken—a brotherhood of human spirits, owning allegiance to one whom they and we call The Master. A brotherhood of man in the widest sense, full of a sense of duty and mutual help, all working and praying and worshipping, some under conditions a stage higher than our own, and striving to raise our minds to a nobler conception of duty, a keener sense of service, and a firmer conviction of the loving Fatherhood of God.

10

Discussion of the Possibility of Premonitions

AMONG the stranger phenomena studied in psychic science, and already partially referred to, are those which seem to suggest a transcending by human faculty of the limitations of space and time. A knowledge of what is occurring simultaneously in distant regions of the earth appears to be obtainable by the faculty known as travelling clairvoyance. A knowledge of what has not yet occurred but which is going to occur likewise appears to be attainable, apart from what may be considered legitimate inference. Information of this supernormal kind is usually received by means of dreams or visions or other intuitive modes of perception. It can be admitted that such experiences are commonly of little or no value, but occasionally the impressions are veridical, so that the result turns out to correspond closely

with what has been predicted, to an extent beyond chance coincidence. In communications received through trance mediums reference to future events is often made; and though this (strange to say) is at present illegal, it is very necessary to run the risk of studying such assertions and bringing them to the test of verification. The subject of prognostication is too important to be suppressed; but it is safer for the present to consider the case of premonitions such as many people have occasionally experienced without the help of a medium. The possibility of such a faculty raises puzzling questions, and hence in our attempt to rationalise experience we must discuss this somewhat more fully.

I repeat that the whole question of foretelling the future involves us in difficulties, and at first sight such foretelling seems impossible, for it seems like a transcending of the limitations of time. Yet it has to be admitted that in some cases predictions are actually recorded and are duly con-

firmed by events; so that one outstanding question is what sort of prediction is possible and what is not.

The type of predictions which are at present accepted without surprise are those made by astronomers. The type of predictions which seem incredible or absurd are those made by fortune-tellers. Between these two extremes there must be many grades, and it is not easy to draw a hard and fast line. Some philosophers have thought that "Time" was but a human abstraction, that its objective reality was doubtful, and that everything both present and future was in some sort prearranged. So far as the mechanical or inorganic universe is concerned this might very well be true. The present is the outcome of the past, and the future flows as a consequence from the present. The great mathematical physicist Laplace used to say that if the position, the speed, and the acceleration, of every particle in the universe could at any one instant be specified, then it was only

a matter of superhuman calculation to predict the course of events, in such a mechanical universe, ever afterwards. And that other great mathematician, W. K. Clifford, used to say that if the motion of every particle could be instantaneously reversed, with no other change or disturbance, then the course of events would retrace themselves; things would begin to unhappen; the past would become the future, and everything would go on in a reverse order, retracing the course of history; the only difference being that the state of equilibrium in that case would be unstable, whereas the known and actually expected course of things is stable. It seems instructive to remember that optically an image of the past can be retraced in inverse order, as by a kinematograph worked backwards. But this after all is only an illustration: there is no reality underlying it: things do not and never will act in that way. Whereas in the real world things do really happen; and events, once they have occurred, cannot be altered: though it is

claimed that their mental and spiritual consequences can be mitigated.

To suppose, however, that the course of events is thus mechanically determined by a sequence of inevitable cause and effect involves us in notions of fixed fate and predestination, which are quite alien to the idea of free will. Laplace did not face the operations of organic or living structures, except on the hypothesis that they too were mechanically determined, and were part of a purely material universe. To most of us it seems that free will is a direct apprehension; we are aware by experience of possessing the power of choice, the power of determining our own actions; so that in accordance with our own volition, that is by planning and designing and executing, we achieve results which would not otherwise have occurred, and which could not be predicted on mechanical principles.

On the other hand, it has been argued that we and other animals always act under the influence of some motive, that these

motives determine our actions, which are therefore inevitable; that a completely motiveless action is unthinkable, and that accordingly really free will is an illusion. The idea is that we are so controlled by motives that not only the inorganic world but the organic world also might be subject to prediction, given a comprehensive knowledge of the existence and nature of the motives which operate and coerce our wills.

There seems a certain paradox about this; and the solution appears to lie in the direction of deciding whether we ourselves, our personalities, are realities which exist outside and supplementary to the material scheme, and whether we contain within ourselves the power of self-determination; in other words, whether our motives are imposed on us from without, or are generated from within. It is no use denying that we are actuated by motives; the question is how those motives originate. The mechanical or material universe, like any other piece of machinery, has no self-

generated motives; for it has nothing that can be called a self. The more natural and perhaps the truer idea is that life and mind are something superadded to the material universe, something which can make use of the properties of matter and the other laws of nature, and divert and modify them to its own ends; that life involves at least the rudiments of something which can look ahead and plan and determine for itself—something that is actuated, not by mechanical forces alone, but by its own impulses, its own determination.

Some philosophers have gone so far as to suppose that this kind of power, which we experience in ourselves, can be traced in its fundamental elements quite low down in the scheme of things; so that even the atoms may be imbued with what has been called a Bios, a power of in some degree and very slightly choosing between alternative paths, when such paths open up. But to most of us this must seem a fanciful idea, the result of inflicting our own feelings on things

which do not possess them, and extending them into regions where they do not apply. Dualism is always rather repugnant to philosophy, which is bound to seek some more monistic view; but the progress of science more and more shows that that ultimate monism cannot be materialistic in character.

Meanwhile in order to form clear conceptions, some sort of Dualism—the recognition of a clear distinction between mind and matter—is in our present state of knowledge inevitable. Without such a distinction we cannot form clear ideas, though we may admit that the ultimate solution of the universe is still far beyond us We have to be guided by the facts of experience, without pretending that we thoroughly understand them and can probe into their ultimate and final intricacies We have gradually learnt that the physical universe consists of positive and negative charges in the form of discontinuous units called protons and electrons, united and connected by the all-embracing continuous medium

in which they move and have their being, which some call Space and others still preferably call the Ether because they find that space quite empty of matter is endowed with physical properties which have still to be unravelled—that there is something in it more than geometry, something essentially physical though not material.

Whether the complete unravelling of those physical properties will ultimately enable us to include Life and Mind in the physical scheme must remain uncertain. It appears unlikely, for at present what we know of life and mind has shown no indication in that direction; for the present we have to think of them as separate unexplained but conspicuous entities which are not yet explicable in terms of anything else, though truly we know by experience that these entities do affect the motions of matter and do produce structures and results which without them would not have occurred.

That life and mind have laws of their own, and are obedient to some system of

cause and effect outside and beyond those which are amenable to calculation, is probable enough. But what their relation may be to Time, and how far it is possible for some higher being to predict the course of events, even in those transcendent and ideal regions, we are surely unable to say. It may be that the course of events of a mental and spiritual kind could be foreknown without being predestinated, and that even voluntary actions could be predicted by a complete knowledge of all the motives; and that this fore-knowledge could exist without the exercise of any coercion, and without any interference with the power of self-determination. Foreknowledge and predestination are by no means the same thing. This is only a matter of common sense. We can predict for instance that an eclipse will happen at a certain time on a certain day, but we have no power of bringing it about or of determining whether it shall occur or not: and many other things we foreknow without the least power of predetermination.

On the other hand there are certain things which we can predetermine. We can decide that we will go to a certain place or do a certain thing at a given time, beforehand; always subject to the condition that nothing unforeseen occurs. That condition, however, is only a consequence of our imperfect knowledge. With perfect knowledge there would be no unforeseen conditions; so that it is imaginable that a being with a perfect knowledge of all the conditions would be able to foresee all the events which, whether self-determined by other agents or not, must be already incubating, and presently after the lapse of time evolve into reality.

Whether such foreknowledge could ever filter down to the agents concerned, in such a way that they could dimly and imperfectly get occasional glimpses of what was thus foreseen, whether in fact they could ever, by aid of higher intelligences, gain some premonition of what was going to occur, can hardly be argued except on a basis of

experience. The question becomes one of fact. Do such premonitions occur, or do they not? That such a possibility is conceivable does not prove that it is able to occur. But if we find by experience that premonitions do occur, then the fact of their conceivability is a help; for it enables us to accept the fact in a reasonable manner, without undue scepticism and without any feeling of irrationality or confusion. We can submit ourselves to guidance by the facts, without feeling confounded by their strange and inexplicable character. We may not know the explanation, but we can be sure that there is one, and that through the long-continued process of evolution we shall one day be able to grasp the totality of things—if not fully—at least more fully than we do now. We feel instinctively that we are part of a law-abiding universe, in which there are no ultimate puzzles and contradictions, that the whole will be ultimately intelligible, though at present we are far from possessing the clue.

The two methods of attaining foreknowledge which we already possess, subject to unknown contingencies in both cases, are the power of Inference, and the power of Planning. We infer that certain things will happen, from what we know of the present; and we plan that certain things shall happen, and have the power of bringing them about.

What other powers of prediction there may be in the universe we do not know; those two seem all that we ourselves possess at present. But those we are continually making use of. We can look ahead; our actions are largely guided by the future, and we make preparation for it. Our existence is not limited to the momentary slice of time we call the present; we learn from the past, and we plan for the future.

So a certain amount of foreknowledge is already within our grasp; and it is an open question whether this power is always one of reasoned sequence and conscious activity, or whether certain individuals are occasionally favoured with an instinctive and illogical

apprehension of events which they could not reason out or rationally foresee, but which yet they or their successors will in process of time gradually arrive at and experience. Such instinctive and non-understood impressions are what we call premonitions, and they may be thought of, tentatively, as filtering down from some higher region of knowledge or intelligence into the receptive faculties of qualified people; even though such people are not yet in a sufficient state of development to be able to apprehend or perceive them by their own powers.

A listener-in at a wireless receiver on some distant island can become aware of events which are going on elsewhere, which he has no power of interfering with, and could not be expected to have any knowledge of. Such a power of transcending the limitations of space without any visible means of communication would a few years ago have seemed mysterious or impossible. Now we are accustomed to it, and know that there is no mystery about it, except

in so far as all our experience is mysterious. So it may be with many other things, when our knowledge has sufficiently increased, so as to remove the facts of experience from the region of superstition into the region of intelligible law and order; we are justified in pushing back mystery into the ultimate fastnesses where it truly resides, but not in denying any fact of experience on the ground that it is inconceivable or absurd. We do not know what is possible or impossible; we can only ascertain what actually is true, and wait for the time when fuller knowledge shall enable us to understand how and why it is true.

A number of actual records of premonition are collected in Mr. Myers's two-volume treatise on *Human Personality*, and there are others in the *Proceedings of the Society for Psychical Research*. But in this book I am concerned rather with attempting to rationalise phenomena than with adducing evidence for their occurrence. Many people are aware of family legends recounting such

experiences, even if they have not had them themselves. It must suffice here to say that according to the evidence, premonitions —sometimes of a kind difficult to trace to unconscious inference—do actually occur, however hard it may be to reconcile them with our ideas about time and the inaccessibility of the future.

For it must be admitted that any power of foretelling the future, except by the contingent and uncertain and rather speculative methods of human inference and planning, does involve some difficulty, does raise questions about the nature of time, and has tended to mislead people into a fatalistic and passive and rather hopeless attitude. It is difficult to imagine that the human future can really be anticipated in any thorough sense; premonitions do seem unlikely. The reason why they seem unlikely is not merely because of the limitation of human faculty: it is difficult to suppose that any Being, however highly developed, or even what is called Omniscient, can fully

foresee all events before they happen. Such a complacent Existence, without any possibility of adventure or risk, or any chance of surprise and delight, merely watching the inevitable "going through the hollow form of taking place," would seem dull and monotonous. And, as far as we can judge about the Universe as a whole, it surely is not dull! Admit free will, admit a power of rebellion, as well as a power of co-operation, and the dullness disappears. The element of adventure is restored, however much it be governed by far anticipation and fervent hope.

We may be sure of this, that higher beings can make inferences about the future denied to us, and can estimate the behaviour even of free will agents by their settled and trustworthy character. In some such way do I think that the foreshadowing of coming events may filter down to us. The difficulty for science is to postulate the existence of higher beings and to allow for our touch with them.

11

On the Asserted Difficulty of the Spiritualistic Hypothesis from a Scientific Point of View

STUDENTS of orthodox science undoubtedly feel great difficulty about admitting the possibility of spiritual agency or the interaction of other Intelligences, even under exceptional circumstances, in mundane affairs. The idea seems contrary to the whole trend of what may be called Newtonian science, though it is true that Newton himself did not scruple to write a General or Theological Scholium as a conclusion to his great work.

To illustrate the difficulty often felt by psychical investigators themselves about anything like a spiritual interpretation of the facts, the truth of which nevertheless they fully admit on grounds of personal experience, I might quote from Professor Richet and other continental explorers; but it will suffice if I use as a text a paragraph from a

recent writer in the *Proceedings* of the S.P.R. for 1929 about the meaning of certain writings which he himself had unconsciously produced and which to superficial appearance seemed inspired by people who were dead. The paragraph runs thus :—

> " . . . Regarded as a scientific working hypothesis, spiritism does not seem to me to be a very hopeful avenue of investigation. The spirit hypothesis has a delusive appearance of simplicity, but so also had Kepler's hypothesis of guiding angels. And how remote this was from the complex reality of Einstein's description of gravitation! In fact, if these supernormal mental phenomena depend on the whims and caprices of departed spirits, then I for one despair of ever being able to discover any law and order in them."

Undoubtedly there is some difficulty, in our present state of comparative ignorance, about specifying or formulating the spiritistic hypothesis in any precise and so to speak scientific manner; for it is an appeal

to the activity of unknown agents, acting by unknown methods, under conditions of which we have no experience, and by means of which we are unaware. We get into touch, or appear to get into touch, with these agencies only when they have affected material objects, for instance someone's brain, thereby stimulating muscles so as to produce results which appeal to our normal senses.

But the admission that we cannot understand how agents work does not justify our denial of the existence of such working. A good deal of modern mathematical physics is in the same predicament. We do not really understand how the properties of the ether, or of what it is now the fashion to call "space-time," act in producing the material effect we call weight or gravitation. We know a good deal about it; we can specify with precision the law of "weight" in so far as it imitates the resultant of an independent and unscreened attraction of every particle for every other. We can

say that the earth acts nearly as if its whole mass were concentrated at its centre, that the law of force is different inside and outside, so that it changes abruptly when the surface is penetrated, and that the force attains a peak value at the surface, sloping down differently on the two sides. We can speak of the state of strain or "potential" to which the force is due, say that it is continuous across the boundary, we can give the law of its variation with distance, and so on. Newton, in fact, correctly formulated the whole theory of gravitation considered as action at a distance, but the true mechanism of what seems like a condition of strain or warp in space brought about by the very existence of matter, was beyond him, just as it is still beyond us. In philosophic mood, Newton was never satisfied with his mode of specification. It merely gave the resultant effect of something that simulated the direct attraction of one body for another across apparently empty space; he had to leave the inner

meaning of such mysterious action for future discovery.

Einstein discarded the attraction or force exerted by a body at a distance, and replaced it by a geometry of space which would account for, or at least express, the observed behaviour in a more intimate and so to speak less magical manner. When a registering thermometer, with a steel index, is "set" by means of a magnet acting through the glass, the index is really moved by the analogous but different modification of space (or ether) that we call a magnetic field. An inert body can only be perturbed or guided by something in immediate contact with it; even though the particular modification of that "something" which enables it so to act, may be due to the neighbourhood of a distant mass of matter, for reasons which remain to be explored.

The fact that we sometimes have to postulate an unknown agency does not justify our attributing anything capricious

to that agency. We are ignorant of how the gravitational agent acts, but we know that it acts in accordance with law and order, so that the results can be duly predicted. Einstein's view (if we may call it Einstein's, though in one form or another it must have been vaguely held by many) is after all *not* so very different from Kepler's asserted hypothesis. What Kepler meant by "guiding angels controlling the planets" (assuming that he used that phrase) I do not know; but I am sure he meant nothing capricious. He must have meant that an unknown something guided the planets in their path; and that is a paraphrase of the modern view. The something is now often spoken of as a warp in space—acting as a sort of groove. In so far as Kepler postulated something in immediate touch with a planet and acting directly on it, he had what now appears to be truth on his side; his thesis being perhaps nearer the ultimate truth, though far less practically useful, than Newton's delightfully simple quantitative

expression for the indirect action of a distant body.

In order to illustrate direct guidance by contact action, we may cite the familiar example of a gramophone needle, which automatically reproduces a prearranged tune, simply by following the path of least resistance. What else, after all, can an inert thing do? That is the meaning of inertia. Animated things are not inert: they need not take the easiest path. A man may climb the Matterhorn for fun. But inanimate unstimulated matter never behaves with any initiative or spontaneity: it is strictly inert. Atoms never err nor make mistakes, they are absolutely law-abiding. If they make an apparent error, if a locomotive engine leaves its track, we call it a catastrophe. All machinery works on that principle; every portion takes the easiest path. It is true that to get a coherent result there must have been planning and prearrangement. Certainly! In all cases of automatic working, whether biological or

other, that must be an inevitable preliminary. But explorers of the mechanism will detect no signs of mental action by their instruments or their senses. To infer a determining or controlling cause they must philosophise. Indeed, we may go a step further and emerge from the past into the present:—A wireless set talks like a gramophone, and to one accustomed only to gramophones it would seem barbarously superstitious to urge that in the wireless case some (possibly whimsical and capricious) operator was actually in control. Statements may be unpalatable, and yet be true.

Now return to gravitation. Planets behave as if they were attracted by the sun. That is certainly true. But what is attraction? A train is not attracted to its destination; lightning is not attracted to a chimney; but it gets there none the less, by continually taking the easiest path. So it is with a planet. Indeed, one might say that everything inert takes the only path open to it, it has no option. The law is a sort of

truism. But the principle, once recognised, has been formulated into a clue; the Principle of Least Action can be expressed mathematically. Once postulate that, and the behaviour of the inanimate portions of the cosmos can be accurately deduced.

The modern statement that the planets move along the line of least resistance, or the easiest path, makes their motion rather closely analogous to that of a railway train guided by the rails. The path and destination of a train are determined by the continual direct influence of the rails, which make it easier for the train to travel in the right direction than to jump them and go astray. We might, if we chose, admit that the path was laid down or determined by the mentality of the surveyors and designers of the route; but a Martian spectator with partial information might still wonder at the apparent intelligence which guided one part of a train to Manchester, and another part to Liverpool, in accordance with the wishes of the passengers or the labels on

the coaches. If told that an invisible guardian angel switched over the points to produce this result, he might resent the suggestion as absurdly unscientific and preposterous; as on a purely mechanistic view it would be.

After having studied trains for some time, our spectator might begin to notice the novelty of a motor-car. His first tendency would be to look for the rails in that case also; and, finding none, he might superstitiously but correctly surmise that a guardian spirit was guiding the car to its destination. In this case, moreover, further experience would soon persuade him that he had to allow for an element of caprice. But even that is not fatal to the truth: he need not throw up his hands in despair. As soon as we introduce the activity of life and mind we get out of mere mechanism and the results are not easily formulated or predicted. The activities of an animal cannot be expressed in mathematical terms, and yet animal instincts and behaviour are

subject-matter for scientific investigation. It is assumed that they obey laws of some kind. Science is not limited to the accurate data and laws of mathematical physics: and to claim that a hypothesis is unscientific because we cannot formulate it completely, or because we do not understand the method of working, or even because there is a certain amount of capriciousness about it, is more than we have any right to claim. Anthropology and sociology are less advanced sciences than physics and chemistry: they have to get on as best they can, with a profusion of data, and with the inevitable complications appropriate to live things. Let us not be put out of our stride by the fear of retaining, in modified form, some of the animistic guesses of primitive man. Experience may lead us, as it led him, to contemplate stranger modes of existence, and more whimsical phenomena, than our long study of mechanism has led us to expect. We must put aside prejudice, be guided by the evidence, and strive for truth.

The superficial simplicity of materialism has served us well, as a comprehensive covering, for many centuries, and we have made good progress under its protection; but it is beginning to get threadbare and inadequate, it is not coextensive with reality, and unsuspected influences are peeping through.

To sum up. A working hypothesis can be followed up and developed rationally without being metrically exact in its early stages. The important question about the spiritistic hypothesis is not whether it is simple or complicated, easy or puzzling, attractive or repellent, but whether it is true. Its truth can only be sustained or demolished by the continued careful critical and cautious method of enquiry initiated by the S.P.R. under the Presidency of a guiding spirit or guardian angel called Henry Sidgwick, with the active (and I believe continuing) co-operation of Edmund Gurney and Frederic Myers.

Let us suppose then that some day human survival and the continuance of personality

beyond bodily death will be demonstrated so clearly that the whole world will accept it as naturally and instinctively as it now accepts that other once controverted theory of the motion of the earth round the sun at the incredible pace of nineteen miles a second. Would not the new conception have as revolutionary an influence on the outlook of humanity as ever the Copernican theory had! Surely it would be momentous in its consequences in many directions. Let me try to trace in a concluding chapter some of the implications of a universal acceptance of survival as a demonstrated fact.

12

The Influence of Demonstrated Survival on Science, Philosophy, and Religion

(1) *Science*

We realise that the evidence for human survival seems often of an insignificant and trivial kind. That is what frequently happens in the early stages of a subject. The facts adduced seem hardly worthy of attention, and yet if they are accepted and followed up they lead to immense developments, unimaginable beforehand.

The pioneers of electrical science attended to the levitation of light bodies, the twitching of muscles, and the production of little sparks; they could not have had the faintest conception of the development of electrical engineering, and the use of electricity for the service of man. Still less could they remotely imagine the astonishing revelation of the electrical structure of matter as the

basis of all material existence, which has been the achievement of our own day.

We have found, or are finding, that the properties of matter are secondary to the properties of empty space, that matter is only the index or sign of what is occurring elsewhere, and that the behaviour of material bodies is due to something which acts upon them from the insensible regions of space, and forms a link or means of communication between otherwise isolated particles.

The movements of the planets—that is their deflected movements, their curvature in orbits round a central body—are produced, we now learn, by the properties of the space in which they move. The light which brings us information has long been known to come insensibly through that space, and to be only displayed by matter when it arrives.

Similarly, every atom is moving in a vacuum, and all the intricate complexity of its movements are due to something received from space.

We learn of the existence of light by its

effect on matter. We learn of the existence of an electric current by its deflection of a compass-needle. We study a magnetic field in empty space by means of the pieces of iron upon which it acts. And so also it may be said we study the properties of life and mind by familiarity with the material vehicles or animated bodies which come within our powers of observation.

What the biologists are studying is the material basis of life. In that study they are expert, and it may be safely left in their hands. They can see the cells of the body or of a live tissue in action, and can tell us what they are doing. They study the behaviour of tissues in health and disease, and can map out the whole material scheme, if not as yet completely—they would hardly claim that—yet to a growing extent which shows they are on right lines.

But the nature of life is unknown even to them. They perceive that animated matter behaves differently from inert or dead matter. They find that it is consti-

tuted of the same atoms and obeys the same laws of physics and chemistry as the inert variety, but that there is something superadded, which causes animated bodies to move in an apparently purposive manner, as if their movements were directed towards some aim or object, as yet unrealised but dimly foreseen.

Instinctive the action may be, but it is controlled by an apprehension of the future, though certainly transmitted to the particles by a stimulus in the present.

All matter is subject to the laws of energy, and the amount of energy appears to be fixed, but by animated existence it is guided or controlled so as to produce results that otherwise would not occur. A bird builds a nest in instinctive anticipation of future offspring. Bees instinctively store honey in preparation for a winter dearth. An insect about to die selects a spot where food will be provided for its larvæ when presently hatched from the egg.

The instances of apparent or instinctive

foresight in the animal kingdom, down to the minutest creature, are too numerous to mention. And the instances told us about their provident habits are not only instructive, but surprising.

Inert matter does none of these things. There is evidently something—some animating principle—that co-operates with and manages matter so as to produce these strange results.

That "something," which for brevity we may call "life," and which only after a long course of evolution blossoms into conscious mind, exists we know not how and we know not where; we only recognise it in association with matter.

But then there are so many things in space which we only thus recognise. We only recognise light and magnetism in association with matter. Apart from the eye, light is nothing but an etheric quiver, of which apart from a special organ we should know nothing.

It is through matter that we become

aware of all the various energies of nature. But matter is not truly responsible for them; the energies are not due to matter, though they are only known to us when they interact with it. Material instruments enable us to detect what is going on in their neighbourhood, as when the swelling of mercury in the thermometer testifies to rise of temperature, or when a glowing filament or a deflected needle testifies to an electric current.

Can magnetism exist apart from matter? Undoubtedly it can. Only it can then make no sign. We do not know of a magnetic field by direct observation, through a direct appeal to our senses; we infer it from the way matter behaves. All operative or controlling existence is in space. Undirected matter is quite inert.

Hence to a physicist it seems no strange thing to think of a guiding and directing principle, like life, as something which exists in space, too, and which may interact with and utilise matter for a time.

The material basis of life attracts our

attention. The animated organism is our proper field of study. But whether life itself, when separated from the organism, continues in any sense to exist, is a problem about which we have to use our reasoning power. We might hardly hope to be favoured by direct demonstration.

It so happens, however, that at the higher levels, when life has blossomed into mind, and when the living organism has become an individual, with a character and personality such as we are familiar with in our own consciousness, the question takes a different form.

For a personal mind, if it still persists, may be able to make some conscious demonstration. By utilising some of the forms of matter with which it was familiar—the brain–nerve–muscle system of another human being, for instance—it may be able to affect our senses; and conceivably it may thus inform us that that same personality still survives, though normally in a condition beyond our ordinary ken.

Needless to say that there is a vast amount of evidence that that kind of demonstration has already been given; and many of those who have studied the subject are now ready to testify that it is a reality.

They assure us that conscious mind does not cease with the death of the physical organ, that mind is not put out of existence when the brain is damaged, but that only its manifestation is interfered with, so that no longer can it furnish the usual sign or index of its existence. It has lost its own material vehicle, and has to take other and less usual methods of attracting our attention.

Well, the evidence must be scrutinised, and must be able to stand criticism before it can be raised to the dignity of proof. But suppose it attained proof, what then?

Some think it has risen to the level of proof already, and that where an individual character has been formed it is able, under certain conditions and occasionally, to testify to its perennial character and continued existence.

I call this not survival, but demonstrated survival. I admit that the demonstration is not yet accepted by the majority of scientific men; indeed I see many reasons why it should be difficult for a biologist to admit the possibility of any such proof—the idea being, to one who has concentrated a life interest on the material basis of life, meaningless, if not repellent. I sympathise with the difficulty; I am often conscious of it myself.

But we must not shut our eyes to facts because they do not fit in with our present theories. If survival is a reality, and if, by actual demonstration the continued existence of higher or mental attributes is proved to be true, then we may expect that life itself even of a low grade never really goes out of existence—though it need not have an individual or personal existence except in its higher grades—and the whole province of biology becomes revolutionised.

I say then that the demonstration of survival, when at length it is satisfactory

and has perforce to be accepted, will have a mighty influence on science.

(2) *Philosophy*

A demonstration of the survival of human personality will influence philosophy, or that branch of philosophy termed metaphysics, which seeks to probe into the fundamental nature of things, and understand the connection between mind and matter.

We shall learn, in all probability, that by attending to matter alone, and to those manifestations of mind which are displayed only through the brain and organs associated with it, we shall not be able to solve the riddle of the universe or to trace the fundamental nature of that interaction.

Philosophers must take a lesson from the physicist and attend more to the properties of space. They are already beginning to do so in many directions. They realise that physicists and astronomers have something more to say, and many of them have

striven with some success to understand the significance of the newer utterances.

But they must be impelled to go further than the physicist has yet gone, and look in the same direction for the solution of problems about life and mind.

They may have to admit that these entities always have a physical, though not a material, basis, and that by a study of that physical or etheric or spatial basis they may hope to gain further light upon the interaction between mind and matter.

If life needs a physical basis, and if life is perpetual, not dependent upon a specific material organism and still in existence apart from matter, then, although the problems raised are innumerable and difficult, they are becoming more hopeful of solution, and more tractable as we follow up the clue.

If the facts are not so, then we must find that out. But if they are so—that is if survival of human being is actually demonstrated—then like any other fact it is vastly

important, and must be taken into account by every philosopher who seeks to unify the universe in its widest and most comprehensive aspect.

If life of any kind persists apart from the body, the whole nature of life needs reconsideration. It would seem to be something transcendental and permanent, like the ether of space, not transitory and evanescent like everything afflicted with the imperfections of matter.

It is turning out to be easier to investigate life at its higher stages, when it has become conscious and able to bear testimony; but the information so acquired can be utilised and extended, with due limitations, to a study of life in its more lowly stages of development.

A philosopher is one who takes all knowledge under his supervision, if not as an individual then as a group, and no fact can be outside his scope. He must make sure that it is a fact, and then be thankful that he has found something which has hitherto

eluded his system, and which may possibly contain the key to the whole.

Let us see what sort of information or testimony has so far been given.

The testimony so far obtained, or purporting to be obtained, from departed human beings is to the effect that memory continues after bodily death; for reminiscences are employed as one means of proving identity.

This, if accepted, shows that memory does not effectively reside in the brain, although habitual usage of certain nerve tracts no doubt makes recovery of memory more easy than when the material instrument has been lost.

Habits may be weakened by that loss, but memory need not be impaired. We find that incidents that have made an impression on the mind of deceased personalities are remembered, and can be recalled under proper stimulus.

Intellect continues also. Literary quotations are often ingeniously applied, so as to

convey information in a curious characteristic and evidential manner.

Aptitudes for learning and for artistic production seem also to continue. Innate, and probably also acquired, faculties and tastes belong to the individual, and are retained.

Indeed, the evidence is that the whole personality survives, with a character and powers similar to those displayed by the old bodily organism.

Above all, family affection continues strong; the desire to help friends and relatives is perhaps the most prominent feature, and indeed often constitutes the motive power that stimulated the effort to communicate.

A wider knowledge, especially a keener appreciation of the future, is sometimes shown, though the knowledge in general remains subject to human limitations, and only in a few (sometimes unexpected) directions, does it exceed our own in quality.

Those on the other side of the veil say that they progress in higher knowledge; but

apparently that higher knowledge, acquired out of contact with earth, seems but little accessible to them when they make the effort to return into material conditions in order to have communion with us.

They seem then partially dazed by temporary reincarnation—if their momentary return to a material body may be so called. The brain is an inhibiting or screening organ, and our own habitual use of it may be rather dazing too. Few can use that instrument effectively.

Even so they see further than we can, they possess what we call clairvoyance, they are not so subject to the limitations of space and time as we are.

And so it is that when they again try to use a brain they feel a strain, and make lapses from which in their normal state they may be free.

They sometimes make an effort to tell us about their surroundings, but we have no means of verifying the information given; its general tenor is that their power of inter-

preting the universe has remained unaltered, or but little changed, and that accordingly their environment appeals to them under much the same guise, and with the same general kind of appearance, as they had been familiar with here.

After all, they are still in the same universe, and although the universe is most profoundly comprehensive, so that it can be regarded in a multitude of ways, it is unlikely that a human being, either here or there, can as yet apprehend any but the human aspect, the one with which our senses have made us familiar, and which is real and true as far as it goes.

So far, then, as their own present conditions are concerned, they testify that there are many grades of existence; they are not all in one place or in one state.

The vicious are not with them; nor presumably are the saints constantly accessible. There is, so to speak, plenty of room, and each appears to enter the state or condition for which he is fitted.

Diversity of tastes, diversity of interests, of powers, and of intelligence, still exist, just as they do down here. And there is a sorting-out process, probably more complete than it is here, whereby we associate mainly with those of our own kind.

Those who frequently communicate with us are evidently happy, amid gracious surroundings, surrounded by beauty like that of terrestrial landscapes, and under conditions which do not feel strange or unnatural.

So uniform is this testimony that I have imagined that perhaps they see the etheric aspect of the very things of which we see the material aspect.

Whatever the explanation, they certainly tell us that they are in a state where they can feel at home, can keep in touch for a time with those they loved on earth, can be of service in many ways; and, though they see opportunities of progress ahead, they are well satisfied to bide their time, and do

their duty in that state of life to which they have been called.

They are not suddenly transmuted into beings of another order. They remain themselves; and changes, like all changes in the universe, are gradual. Five minutes after death, as the Bishop of London has said, they are much the same as they were five minutes before, except that they are rid of the burden of the flesh.

It is difficult to realise what it all means, but they certainly say that they have music, that they can paint, that they can carry on their studies.

Literature is somehow not closed to them, they do not seem deprived of any of the intellectual pleasures which they enjoyed here. It seems that we are never too old to learn, and to enlarge our powers of appreciation; for that knowledge, those powers and aptitudes, are a permanent benefit.

The next world—a personal and subjective phrase—seems to be very much what

we make it. We seem to be building our future surroundings in terms of character here.

Those who attend only to themselves will have only themselves to attend to. Those who have cultivated wide sympathies and have been of service to their brethren will find their joy and scope in service enlarged and exalted.

In brief, most of the departed rejoice at the condition they find waiting for them, and are happy and content.

They do indeed occasionally testify that there are far higher beings in existence, and that they themselves are in the course of progressing towards higher states.

They also claim that from time to time they can inspire those left behind, and help them to achieve results, to gain ideas, to make discoveries, and that to this power we owe much of value that comes through what we call genius.

Although this kind of service may continue for a long time, they suggest that

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As a matter of fact many bereaved people already take comfort in the reception of clear and characteristic messages from their loved ones.

The veil is wearing thin, and we are beginning to realise that the separation into two states or conditions of being is an artificial separation, due mainly to the limitation of our animal senses, and that a unity, a continuity, dominates the whole.

We are welded together in the bonds of love, as the heavenly bodies are welded together by the uniting bonds of gravitation, and as separate atoms are grouped into solids and held together by the ether of space.

There need be no isolation, no bewilderment; the universe is more perfect than has yet been conceived, even by our poets; and the enlargement of conception gained by emancipation from the material body leads to yet keener appreciation of the grandeur and beauty of existence.

Truly there is much for the philosopher to learn.

(3) *Religion*

What will be the effect upon religion of a demonstrated case of survival—or rather, not of an individual case, for that would always be doubtful, but of the demonstration that human beings, with their full character and personality, survive the death of the body, and continue in another, certainly psychical, perhaps physical, but immaterial order of existence?

It may be said that the information briefly summarised in section No (2), about the conditions of permanent existence, has already a bearing on religion. Undoubtedly it has, but it is the result of more than a mere demonstration of survival; it represents information obtained from those who have survived; and as long as their survival itself is in doubt it is not available for use.

By religion we will here mean the reaction of an intelligent person, not exactly to the universe as a whole—for that would be philosophy—but to the highest conception

which the person has been able to form concerning the meaning and cause of existence.

If he has been touched by religion at all he has presumably formed some conception of a Being who understands and controls the working of everything that he can perceive or imagine, and towards the fulfilment of Whose will, so far as he understands it, he desires to regulate his life.

A person who chose to assume that the universe was irrational, without aim or object—merely a random dance of atoms under the influence of purely chemical and physical forces—might resent the idea of religion as having any meaning or significance for him.

I think, however, that such people are extremely rare, and that the most consistent materialist is willing to admit that there is an unknown, and possibly unknowable, mystery surrounding existence, of which he stands in some awe, without presuming to formulate any idea of the nature of that mystery.

The appreciation of goodness and of law and order is universal. Hence practically some form of religion is common to all mankind.

The question, therefore, is, what bearing a demonstration of human survival beyond the material body would have upon religion in this broad and comprehensive sense?

First, it would show that life is not limited to its material forms of manifestation, that it is more than a mere function of animated matter, and that its explanation is to be sought in a region outside that matter.

That, however, in so far as it is justified would be primarily a scientific conclusion, for it would show that the brain and other organs of the body have not the last word in the interpretation of mind and consciousness. It would show that those entities can exist and can continue, apart from the instruments which demonstrate them to the senses; and this discovery would have a bearing on any system of philosophy which might then be in vogue.

Such a system would tend to open the mind to an enlarged view of the universe, and would lead to the inclusion of mental and spiritual realities apart from matter, and possibly existing in space.

If the animating principle that we are aware of in ourselves has a permanent existence, and if that animating principle is individualised, so that our personalities continue, the door is open to the conception of other intelligences higher than our own, which may likewise exist. For no reason can be assigned why we or any other of the organisms on earth should be the highest that can exist anywhere.

Those who have lived on the earth in the past, if in any sense they continue, need not surely have been stagnant and unprogressive. The process of evolution that has brought us thus far may carry us on much farther.

Time is of the essence of the process of evolution; and in the lapse of time those who once made use of the properties of

terrestrial matter for their initial development as individuals may have progressed to heights to us unthinkable, and may have come into communion with other lofty spirits whose development was not terrestrial at all.

In other words, the demonstration of the survival of the human spirit would, when accomplished, establish the existence of a spiritual world; that is to say of an order of being in the universe, inaccessible to the senses, and beyond our present experience or apprehension.

Our own hopes and aspirations would then be regarded as a faint indication or incipient example of something far more deeply embedded in the nature of things, "a process far more deeply interfused," which may lead us in the last resort to surpass our present attainment as far as that surpasses the attainment of the lowest forms of life.

Once take the initial step, and there is no limit. Continuity reigns, and we are

quite unlikely to come to a boundary or to some ideal condition beyond which there is nothing. The spiritual world, once admitted, may rationally be thought of as extending to infinity.

There is no limit or boundary to the material universe. The same system of law and order holds throughout. And if spirit and matter are interrelated, so that all that we can observe is a sign of something dominating and interacting and giving partial indications of a great Reality, then the whole may be suffused with an intelligence and a meaning beyond anything that we can conceive.

The only limit to conception is imposed by our finite minds; and the highest conception of reality which at any period we have been able to form is what we designate by the term "God."

That term, too, has evolved. The thoughts of men have widened with the process of the suns. The attributes assigned to that term have changed from time to

seeks to worship at the shrine of the Holy. Christianity assumes that a Higher Being has interacted with matter, and has demonstrated, by means of a material body, some of the Divine attributes, so as to bring them within human cognizance.

Thus it is claimed that in spite of all appearances love is the dominant feature, that the whole process of evolution is guided by a beneficent Fatherly purpose, that we are living in the midst of an infinitely complex and beneficent reality, to which there is neither beginning nor end.

If we ask what influence demonstrated survival may have upon conduct, we are entering the field of ethics, and each must judge for himself what the effect would be if we knew for certain that his own personality, his own character, would continue, that there was no getting away from it, and that it would be either a blessing or a burden for vast epochs of time.

On the whole it would seem likely to increase his feeling of responsibility, and

might stimulate a desire to learn more of what has been taught by the higher of the sons of men about deep and apparently eternal things.

Apart from controversy, the religion of English-speaking communities is Christianity, and Christianity has been described as not so much a doctrine as a life. It is both; but at any rate it is a very human form of religion, and has a strong practical bearing.

Will an assured scientific knowledge of survival, when it comes, have anything to say about Christianity? Undoubtedly it will. It will make its doctrinal acceptance in many ways much easier. The continued existence and activity of the Redeemer will follow almost as a matter of course.

The episode of Incarnation which made the demonstration possible will be always historically important; but its contemplation will be illuminated and completed by the continued action of the Divine Spirit down the ages.

So much has been written about the

resurrection of the Central Figure of Christianity that it has become almost tiresome. It is seldom contemplated from the entirely human point of view. It is treated as miraculous and exceptional; and the survival is supposed to be demonstrated by an empty tomb, as well as by the Forty Day appearances.

Clerical authorities may be right in contending for a special and exceptional treatment of that one material body; it may be a true instinct which impels them to lay stress on the disappearance of the corpse.

But that kind of resurrection is not essential to continued existence, and is not representative of our own immaterial survival. There will be no empty tomb in our case; at least not until we have progressed immeasurably higher as a race. Even that may come. Who is to say? The Gospel occurrence may be an anticipation of something latent in the relation between mind and matter, which only an exceptionally lofty personality can make effective.

If that is so, a rational interpretation—otherwise lacking—can be accorded to the phrase "the first fruits of them that slept."

But still, even as regards that Central Figure of the Gospels, surely the continuance of activity, here and now and always, is more important than the particular method by which that continuity was secured. The method is of interest, but not so essential. The more essential truth is that contained in such sentences as "He ever liveth to make intercession for us"; and again, "My Father worketh hitherto, and I work."

Even so we shall live and work also. Our birth may be "a sleep and a forgetting," but not our death. Death releases us from the burden of the flesh, introduces us to the glorious company of those who have gone before, and opens out a majestic panorama of love and service.